DYNATRON

BY APPOINTMENT
TO HER MAJESTY QUEEN ELIZABETH II
MANUFACTURERS OF
TELEVISIONS & RADIOGRAMOPHONES
DYNATRON RADIO LIMITED

Service Manual
for
SRX 20 series ~~chassis~~

including models:

RG 1010PW, RG 1110PM, RG 1210PK,
GC1010PW, GC 1110PM, GC1210PK,
MC1010CR, MC 1610CT, GC1410 PW,
GC 1310 PW, GC 1510PM, MC 1710 CT,
MC 1711 CT, RG 1011PW, GC-1511 PM,

February 1977

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Note: With the exception of Model MC1711CT which uses the Philips GC037 Deck unit, the change from 1010 to 1011 etc refers to a record deck change as detailed in the Service Supplement Part No 726-17406.

Introduction

The SRX20 series chassis described in this manual is a compact, high fidelity instrument of advanced design.

The four printed circuit boards are as follows:—

AM/FM Tuner
Input Selector
Tone Control Panel
Main Amplifiers/Power Supply

The main amplifier/power supply board is mounted on a heat sink to form a sub-assembly which, in turn, is attached to the main chassis and hinges out for access.

The mains transformer is remotely located in the cabinet and connects to the main chassis by a multi-way connector and terminal block.

The models listed on the front cover of this manual are all fitted with a removeable base for ease of access to the chassis and ancilliary equipment.

Ancilliary Equipment fitted to models using SRX20 series chassis

Models RG1010PW, RG1110PM and RG1210PK are fitted with a Garrard SP25 Mk. IV Record playing unit and Vernitron V 100 magnetic cartridge.

Models MC1010CR, MC1610CT, GC1010PW, GC1110PM and GC1210PK are fitted with a Garrard 35SB Record playing unit, Vernitron V 100 cartridge and a Dynatron CD780 Dolby System Stereo Cassette Tape Deck.*

**Dolby is the registered trade mark of Dolby Laboratories Inc.*

Specification

Stereophonic Tuner Amplifier, SRX 20

Mains Power Requirement:	240 volts AC 50Hz
Rated Maximum Power Output:	RMS watts into *8 ohm load:* Min. Z. 4Ω 10 watts + 10 watts both channel driven opp 12 + 12 W into 4Ω.
Distortion Rated Maximum Power Output:	1%
Distortion (THD)	Less than 0.5% at –½dB below rated maximum output
Frequency Response:	20Hz – 30kHz, –3dB Linear inputs
Tone Controls:	Bass ± 10dB at 100Hz Treble ± 10dB at 10kHz
Balance Control:	Full range each channel
Contour Filter:	+10dB at 80Hz and +4dB at 10kHz. (Vol. –3dB or below)
Input Sensitivity:	For rated maximum output Tape replay 100mV Linear Response Disc 3mV R.I.A.A. Response Radio 30% Modulation
Tape Output Signal:	100mV via 22K ohm
Headphone Output:	Into 8–600 ohm load. Standard 6mm Jack
Loudspeaker Output:	2-pin DIN pattern sockets for 2 Main & 2 Remote loudspeakers 8 ohm impedance; Main units switched by headphone jack socket
Receiver Band Coverage:	L.W. 285–150kHz 1100–2000 metres M.W. 1630–525kHz 185– 570 metres V.H.F./FM 87.5–104 MHz
M.P.X. Stereo Channel Separation:	30dB at 1kHz
Signal/Noise Ratio:	Tape I/P –66dB Disc I/P –60dB V.H.F./FM Radio 30dB with 2μV input 55dB with 10μV input V.H.F./FM Radio A.F. limiting –3dB with 2μV I/P, 0dB with 5μV I/P A.M. Radio S/N 20dB with 300μV/Metre input average VHF/FM A.M. Rejection better than 45dB with 10μV input MPX stereo Residual Pilot tone output –40dB
AFC and Mute Control:	Switchable AFC linked with inter-station noise muting on VHF/FM waveband.
Solid State Device Complement:	17 Transistors, 1 F.E.T., 4 I.C.s, 5 Power Diodes, 4 Signal Diodes, 2 Ceramic Filters, 2 Zener Diodes, 1 L.E.D.

Making Connections

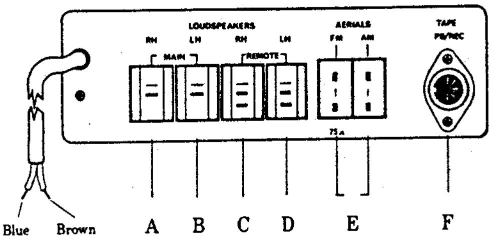


Fig 1

Before your Dynatron equipment is put into operation, the following details regarding installation, setting-up procedures and various connections must be observed to ensure optimum performance and trouble-free operation.

Mains Supply

This equipment is designed to operate from a 240 Volts, A.C. 50 Hz. mains supply. Please check that your mains supply is suitable for this equipment. Under no circumstances should connection be made to D.C. mains as serious damage will result.

Mains Plug

Fit a suitable mains plug to the two-core mains lead:

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

BLUE – NEUTRAL
BROWN – LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

Connect the blue wire to the terminal marked with the letter N or coloured blue or black.
Connect the brown wire to the terminal marked with the letter L or coloured brown or red.

Note: If a 13 amp three-pin plug (BS 1363) is to be used, a fuse rated at not more than 3 amps must be fitted. If another type of plug is to be used, a fuse rated at not more than 5 amps must be fitted either in the plug, the adaptor, or at the distribution board.

Loudspeakers

The loudspeakers should be connected to the two-pin DIN pattern sockets provided. All Dynatron loudspeaker units are supplied with a suitable plug fitted to the connecting cable. If other types of loudspeakers are to be used they should be of 8 ohms impedance and in matching pairs. Ensure correct polarity when wiring plugs. The loudspeaker units built into Radiogram models are connected, at the factory, to the MAIN loudspeaker sockets.

Two Loudspeakers

Connect the right- and left-hand loudspeaker plugs to the MAIN loudspeaker sockets (Fig.1, Ref. A and B) making sure that the right-hand loudspeaker is connected to the right-hand socket, and vice-versa.

Four Loudspeakers

If you wish to connect a second pair of loudspeakers – for example as extension speakers in another room – they should be connected to the REMOTE loudspeaker sockets (Fig.1, Ref. C and D) ensuring that the right-hand loudspeaker is connected to the right-hand socket, and vice-versa.

See "Positioning the Equipment", page 00.

Headphone Sockets (Fig.3, Ref.1)

Stereo Headphones of 8–600 ohm impedance and fitted with a standard stereo jack plug may be connected to this socket (see "Headphones").

When the headphone jack is inserted, the two loudspeakers connected to the MAIN loudspeaker sockets will automatically be silenced.

If four loudspeakers are connected, the headphone jack will silence the MAIN loudspeakers, as above, whilst the REMOTE loudspeakers, for example in another room, will remain operative. If this facility is not required, simply removing the REMOTE loudspeaker plugs will silence these loudspeakers, leaving only the headphones operative.

Aerials

VHF/FM Reception

External FM Aerial

An external FM aerial should be connected to the FM aerial socket (Fig.1, Ref. E) with the plug marked "FM" (supplied in the accessory pack) using 70–80 ohm co-axial feeder. Note: As the FM aerial input is 75 ohm unbalanced it is necessary that the socket is inserted so that the outer braid is connected to the "earth" socket. The signal received will be loudest when the plug is inserted the correct way round.

Internal/Plug-in Aerial

This type of aerial is suitable for use in areas of high signal strength only – e.g. in close proximity to a transmitter.

Most floor-standing models are fitted with an internal aerial connected to the FM aerial socket at the factory.

If your model is supplied with a plug-in type aerial in the accessory pack, this should be connected to the FM aerial socket. The signal received will be loudest when the plug is inserted the correct way round.

Stereo Reception Normal/Poor signal strength areas

Because of the technicalities of stereo radio, it is necessary to provide a much stronger signal at the receiver than for a normal mono transmission. We strongly recommend, therefore, the use of the best aerial installation that can conveniently be installed for optimum stereo radio reception. In the majority of cases, this will need to be of the loft or roof type.

Long and Medium Wave (AM) Reception

An internal "Ferrite rod" aerial is provided for Long and Medium wave reception and will prove adequate in most locations. Should the instrument be positioned so that signal pickup is not sufficient, then an external aerial should be connected to the socket marked "AERIALS AM" (Fig.1 Ref. E) using the plug supplied in the accessory pack marked "AM").

The Tuner - Amplifier

The tuner-amplifier fitted to your Dynatron Audio Equipment is a precision instrument designed for ease of operation and optimum performance with a power output of 10 watts RMS per channel. The controls listed below, are illustrated in Fig.3 and reference should be made to the diagram whilst familiarising yourself with their operation.

Tuner Controls

A Long Wave Button
B Stereo Beacon L.E.D.
C Tuning Control Knob
D Medium Wave Button
E VHF/FM Button
F AFC Button

Amplifier Controls

1 Stereo Headphone Socket
2 Contour Filter Switch
3 Mode Switch
4 Mains ON/OFF Switch
5 Treble Control
6 Bass Control
7 Disc Button
8 Tape Button
9 Balance Control
10 Volume Control

Amplifier Controls – Refer to Fig.3

Contour Filter (Ref.2)
When set to "ON" this switch activates a circuit which compensates for the apparent lack of extreme high and low frequencies when listening at low volume levels. This compensation decreases automatically as the volume control is advanced.

Mode (Ref.3)
This switch should be set to "MONO" if making a recording from a stereo source to a mono external tape recorder.

Depending on the connection from the tape recorder to the amplifier, it may be necessary to set the switch to "MONO" when playing back a recording from a MONO tape recorder to ensure that the sound comes from both channels.

When receiving a weak or distant VHF-FM transmission, setting the Mode switch to Mono will reduce the background hiss.

Treble (Ref.5)
This control governs the high frequency (or treble) response of the amplifier. When set to the mid-point on its scale, the response is "level" – whilst moving the control towards the top (lift) end of the scale increases the response and moving the control towards "cut" decreases the response.

Bass (Ref.6)
This control governs the low frequency (or bass) response of the amplifier, and functions in a similar way to the Treble control – at the midpoint the response is "level" whilst "lift" increases the response and "cut" decreases the response.

Balance (Ref.9)
The balance control governs the ratio of sound between the right- and left-hand channels and, for electrical balance, should be set at the midpoint of its scale. When listening to a mono disc, tape or radio programme, the sound should appear to come from a point mid-way between the two loudspeakers. Moving the Balance Control towards the top of its scale (marked "Right") will move the sound towards the right-hand loudspeaker, whilst moving the control towards the bottom of its scale (marked "left") will move the sound towards the left-hand loudspeaker.

Volume (Ref.10)
Moving this control towards the top of its scale increases the volume of sound from both the right- and left-hand channels simultaneously.

Tuner Controls – Refer to Fig.3

Tuning Control Knob (Ref. C)
This control moves the cursor along the tuning scale which is calibrated for VHF/FM, Long and Medium (AM) wavebands.

VHF/FM Waveband Button (Ref. E)
Depressing this button activates the VHF/FM section of the tuner, and the associated controls:

AFC Button (Ref. F)
Stereo Beacon L.E.D. (Ref. B)
Tuning Control Knob (Ref. C)

AFC Button (Ref. F)
This button, when depressed, brings the Automatic Frequency Control (AFC) circuit into operation to automatically maintain the selected station frequency. Depressing and releasing this button again switches the circuit off.

Quiet Tuning
A muting circuit is linked with the AFC button so that Quiet Tuning is available on the VHF/FM waveband when the AFC button is depressed. This facility reduces the amount of noise which is heard when tuning from one station to another.

The Stereo Beacon L.E.D. (Ref.B) will glow when a stereo broadcast is being received.

Note: The stereo decoder circuit is switched in automatically by the pilot tone signal, put out by the transmitter, which is part of the overall stereo information. The beacon lamp merely indicates that the radio receiver (or tuner) section has switched itself over to the stereo mode. Certain programmes, from various transmitters, may carry the pilot tone signal even though the transmitted material is not in stereo. Under these circumstances the beacon L.E.D. will glow, but the reproduced material will not be in stereo.

Long and Medium Wavebands (Ref. A & D)
Depressing one of these buttons activates the AM section of the tuner and selects the Long or Medium waveband. All AM broadcasts are, of course, in mono only.

The Tuner - Amplifier -continued

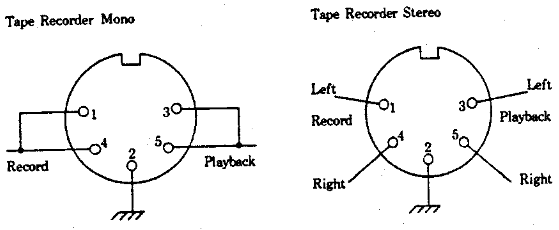
External Tape Recorder

A 5-pin DIN pattern socket marked "Tape PB/Rec" is provided on the rear sockets panel for the connection of a tape recorder (See page 2, Fig. 1, Ref. F). Figs. 2A and 2B show the plug pin connections for this socket.

A suitable connecting lead, terminated at one end with a 5-pin DIN pattern plug conforming to these pin connections and fitted with the correct input/output plugs for the auxiliary equipment, can usually be obtained either through your Dynatron Dealer, or from the supplier of the auxiliary equipment.

The input/output values of this socket are to DIN standard.

Connections as viewed from wiring side of socket


Tape Recorder Mono
1
3
4
2
5
Record
Playback
Tape Recorder Stereo
Left
Record
Left
Playback
Right
Right

A

B

Fig 2

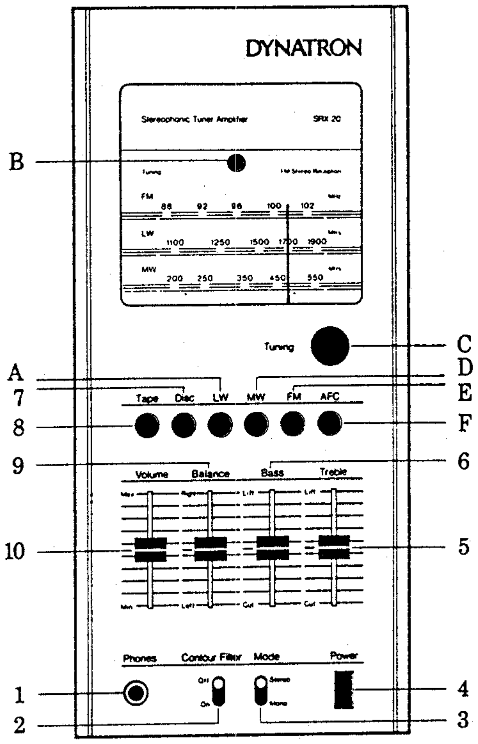

DYNATRON
Stereophonic Tuner Amplifier
SRX 20
B
Tuning
FM Stereo Reception
FM
88
92
96
100
102
MHz
LW
1100
1250
1500
1700
1900
MW
200
250
350
450
550
Tuning
C
A
D
7
E
Tape
Disc
LW
MW
FM
AFC
8
F
9
6
Volume
Balance
Bass
Treble
Max
Right
Lift
Lift
10
5
Min
Left
Cut
Cut
Phones
Contour Filter
Mode
Power
Off
On
Stereo
Mono
1
4
2
3

Fig 3

The Record Playing Unit

Instructions for setting-up and operating procedures for the record playing unit are given in the manufacturer's operating instruction manual supplied separately with this equipment.

Please refer to these instructions before setting the unit into operation.

Note 1: The recommended pickup stylus force for the cartridge fitted to this equipment is 2.5 grams.

Note 2: Please remember that, during the guarantee period, all maintenance operations outlined in the record playing unit instruction manual should be referred to the Dynatron Dealer from whom your equipment was purchased.

Transit Screws

Always ensure that the record playing unit transit screws are tightened so that the unit is securely clamped to the motor board if the audio equipment is to be transported.

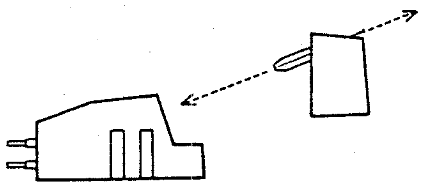
DYNATRON RADIO LIMITED CANNOT ACCEPT RESPONSIBILITY FOR DAMAGE THAT MAY OCCUR IF THE TRANSIT SCREWS ARE NOT TIGHTENED PRIOR TO TRANSIT OF ANY KIND.

Stylus Examination or Replacement

NEVER CONTINUE TO OPERATE THE EQUIPMENT WITH A WORN OR CHIPPED STYLUS.

To gain access to the stylus assembly for cleaning or replacement, proceed as follows:

1. Release the pickup cartridge from the pick-up arm by grasping the shell carrier and withdraw it gently from the arm housing.
2. Turn over the cartridge so that the stylus is upper The stylus can now be examined or cleaned (u proper stylus cleaning brush). To remove the styl closer examination or replacement, proceed as follc
3. With the cartridge held so that the stylus is upper grasp the stylus housing and gently withdraw it the body of the cartridge. To refit the stylus, sin grasp the stylus housing and, with the stylus tip most, insert the stylus guide tube into the aperture cartridge body; push home until the stylus hous flush with the body. (See Fig. 4).
4. Re-fit the cartridge carrier onto the arm by inserting the carrier into the arm housing and ther home.



Stylus Removal / Installation
Fig 4

Access, Removal & Installation

1. When removing and installing the chassis, always carefully note the positioning of the inter-connecting cables and the points at which they are cleated. Interaction may occur if cables are not correctly placed.
2. The thermal fuse fitted to the mains transformer is replaceable by withdrawing the active element from its housing. The element of the thermal fuse is bridged by a special low melting-point metal and must not be repaired using ordinary solder. Always fit a replacement element.

Chassis Removal and Installation

1. Secure the pickup-arm to its rest and tighten the record playing unit transit screws so that the unit is in the fully clamped position.
2. Disconnect internal loudspeaker and aerial plugs from rear sockets panel.
3. Close the lid and invert the unit, placing it on a soft surface (i.e. felt covering).
4. Locate and remove the base fixing screws and remove the base. Note that it is not necessary to remove internal loudspeaker housing base panels unless access to the loudspeakers is required.
5. Release the mains lead to the mains transformer from the terminal block and release the plug and socket inter-connecting the mains transformer secondary with the chassis.
6. Disconnect the signal leads to the record player from the chassis (SKT 603).
7. Locate 2 x M4 nuts securing chassis over studs. Remove these nuts and associated washers and carefully lift chassis clear of cabinet.

Install the chassis in reverse order, taking care that the mains lead is not trapped by the chassis at the rear sockets panel aperture in the cabinet. When reconnecting internal loudspeakers, ensure that they are connected into the loudspeaker sockets marked 'MAIN' and that the left-hand loudspeaker is connected to the L.H. socket and vice-versa.

Ancilliary Equipment Removal and Installation

1. Follow steps 1, 3 and 4 under Chassis Removal and Installation.
2. Record Player

   Removal
   1. Disconnect the signal lead to the record player from the chassis, as for chassis removal (item 6).
   2. Disconnect the mains lead wires from the terminal block.
   3. Place the unit on one side, so that both sides of the record player are accessible.
   4. Locate the two record player transit screws on the top side of the player and, whilst steading the player, turn the transit screws until they become flush with the deck plate.
   5. Locate the two spring-steel transit screw clips on the underside of the player and move them into their vertical position so that they will clear the transit screws holes.
   6. Carefully remove the record player from the top of the cabinet.

   Install in reverse order, passing the mains and signal leads through the cutout in the motor board. Ensure that the record player suspension springs are seated in their corresponding sockets in the motor board, and that the transit screw clips are set to their horizontal position after installation. Tighten the transit screws so that the player is clamped to the motor board before inverting or transporting the unit.
3. Cassette Tape Deck (not models RG1010PW, RG1110PM and RG1210PK).

   Removal
   1. Unplug the tape deck signal lead from 5-pin DIN socket SKT604A on the chassis.
   2. Disconnect the 5-way power supply connector located on the tape deck.
   3. Place the unit on one side so that both sides of the cassette tape deck are accessible and release all cleats holding the connecting leads — make a note of the position of the leads for future reference.
   4. Locate and release the M4 nut securing the front support bracket (See Fig. 0) and remove the nut, washer and bracket.
   5. Whilst steadying the tape deck from its top side, locate and remove the 4-off M4 nuts and washers securing the deck to the motor board.
   6. Carefully remove the tape deck from the top of the cabinet.

   Install in the reverse order, passing the mains and signal leads through the cutout in the motor board. Ensure that the tape deck is located squarely in the motor board before fully tightening the securing nuts. Take care to route connecting leads correctly, as noted whilst removing the deck, to avoid interaction.

Parts List~Casing Items

Qty Used	Description	Part No.
	RG1010PW	
	Cabinet Walnut	42587086
2	Handle	49867027
	Lid Stay	41717082
2	Grommet	32567062
2	Self Adhesive Disc	46017146
2	Magnetic Catch	41747003
2	Knob	49867037
Set 4	Legs "Queen Anne"	46217226
4	Leg Plates	40117238
	Aerial Assy FM	30357005
– 2	Speaker 8" x 5" 15 Ohm Bass	24027094 –
– 2	Speaker 15 Ohm 4"x3". Treble	24027095 –
2	Plug 2-pin DIN	26430041
	Mains Transformer	1462702~~9~~ 7
	THERMAL FUSE	252-20007
	RG1110PM	
	Cabinet Mahogany	42587087
2	Handle	49867021
	Lid Stay	41717082
2	Grommet	32567062
2	Self Adhesive Disc	46017146
2	Magnetic Catch	41747003
2	Knob	49867037
Set 4	Legs Mahogany	46217227
	Aerial Assy FM	30357005
– 2	Speaker 8" x 5" 15 Ohm Bass	24027094 –
– 2	Speaker 15 Ohm 4"x 3" Treble	24027095 –
2	Plug 2-pin DIN	26430041
4	Leg Plates	40117238
	Mains Transformer	1462702~~8~~ 7
	THERMAL FUSE	252-20007
	RG1210PK	
	Cabinet Oak	42587085
2	Handle	49867029
	Lid Stay	41717082
2	Grommet	32567062
2	Self Adhesive Disc	46017146
2	Magnetic Catch	41747003
2	Knob	49867031
– Pair	Legs LH	46217224 –
– Pair	Legs RH	46217225 –
4	Leg Plates	40117238
	Aerial Assy FM	30357005
– 2	Speaker 8" x 5" 15 Ohm Bass	24027094 –
– 2	Speaker 15 Ohm 4"x 3" Treble	24027095 –
2	Plug 2-pin DIN	26430041
	Mains Transformer	1462702~~9~~ 7
	THERMAL FUSE	252-20007
	GC1010PW	
	Cabinet Walnut	44417106
2	Handle	49867027
	Lid Stay RH	41717114
	Lid Stay LH	41717115
2	Grommet	32567062
Set 4	Legs "Queen Anne"	46217226
4	Leg Plates	40117238
	Hinge	41717112
	Aerial Assy FM	30357005
	Mains Transformer	1462702~~8~~ 7
	THERMAL FUSE	252-20007
	GC1110PM	
	Cabinet Mahogany	44417107
	Handle	49867021
	Lid Stay RH	41717114
	Lid Stay LH	41717115
2	Grommet	32567062
Set 4	Legs Mahogany	46217231
4	Leg Plates	40117238
	Hinge	41717112
	Mains Transformer	1462702~~9~~ 7
	Aerial Assy FM	30357005
	THERMAL FUSE	252-20007
	GC1210PK	
	Cabinet Oak	44417108
2	Handle	49867029
	Lid Stay RH	41717082
	Lid Stay LH	41717081
2	Grommet	32567062
Pair	Legs RH	46217224
Pair	Legs LH	46217225
4	Leg Plates	40117238
	Hinge	41717112
	Mains Transformer	1462702~~8~~ 7
	Aerial Assy FM	30357005
	THERMAL FUSE	252-20007
	MC1010CR	
	Cabinet Rosewood	[illegible] 9
[illegible]	Hinge	[illegible]
	→ Lid	44427039
4	Domed Nut	50637041
	→ Handle. + POSSIBLY NEED.*	49867038
5	Insert	50517047
8	Spire Clip	49267311
	Base Moulding	44457018
	Mains Transformer	1462702~~8~~ 7
	Badge Royal Warrant	45917284
	→ Badge Dyn Moulding	45917285
	→ SCREWS (BOLTS)	503-37114
	MC1610CT	
	CABINET TEAK	444-17111

* Possibly Need both

Qty Used	Description	Part No.
	Garrard 35SB	
	Balance Weight	40267138
2	Bush	53257184
	Arm Extension Tube	25177035
	Pick Up Arm Assy	25177039
	Spring	49237186
	Marker Plate	45437169
	Spring Clip	53077064
	Dial	41227005
	End Plate	41377121
	Spring Clip	53077065
	Pivot Pin	53597209
	Pivot Screw Assy	50337222
	Spring	49237185
	Motor Loom Assy	21817043
	Washer	53217266
	Motor	36167029
	Spring	49247125
	Grommet	32567051
	Control Trim	45437172
	Spring	49237187
	Carrier	29047225
	Drive Belt	35837035
	Circlip	53077084
	Spindle	53567035
	Turntable Assy	52817118
	Turntable Mat	46657028
	Spring	49257093
	Contact Moulding	29047224
	Cushion Ring	53057006
	Thrust Washer	53210001
	Ball Race	52027007
	Washer	53210001
	Ring	53050165
	Spring	49267245
	Trim	45437171
	Pickup Rest Assy	40267139
	Spring Assy	49237153
	Switch	27727044
	Block	46277366
	Socket	26737137
	Spring	49247102
	Garrard SP25 Mk IV	691-37055
	Bush	53257184
	Counterbalance	40267088
	Special Screw	50337219
	P/U Arm Extension	25177035
	Bush	53257184
	P/U Arm Assy	25177033
	Stylus Force Spring	49237146
	Self Tap Screw	50237107
	Self Tap Screw	50237107
	Pivot Screw	50337221
	Stylus Force Plate	45437165
	Pick-up Bracket Assy	40267127
	Spring Clip	53077064
	Stylus Force Dial	41227002
	End Plate	41377084
	Spring Clip	53077065
	Washer	53257128
	Pivot Pin	53597209
	Pivot Screw	50337222
	Spring	49237147
	Cover Screw	50237123
	Bias Compensator	69137075
	Nut—P/U Cue Adj.	50637047
	Cueing Lever Unit	40267128
	Ball Bearing	52047013
	Ball Bearing	52047014
	Washer	53217145
	Spring Clip	53077031
	Spring Washer	53080077
	Spring Clip	53070047
	Overload Spring	49267245
	Washer	53217232
	Spring	49257092
	Index Spring	49237185
	Motor & Pulley Assy	36167026
	Rubber Grommet	32567053
	Operating Knob	41167039
	Control Knob	41167039
	Spring Clip	53077031
	Lifting Spring	49237148
	Index Spring	49237149
	Spring	49237151
	Tension Spring	49237143
	Fibre Washer	53257128
	Rubber Wheel	52877024
	Plastic Washer	53257156
	Spring Clip	53070043
2	Transit Screw	50337199
	P/U Head Decor Plate	46027059
	Turntable & Mat Assy	52817105
	Turntable Mat	46657022

Qty Used	Description	Part No.
	Retaining Clip	5307704
	Turntable Centr. Disc	4602704
	Record Spindle	5356702
	Contact Moulding	2904722
	Slide-in Carrier	2904722
	Spring	4923715
	Rubber Motor Grommet	3256705
	Screw	5023720
	Rubber Motor Grommet	3256705
	Loop Spring	4924710
	Tag Strip	2906712
	Return Spring	4923715
	Spring	4923715
	Pick-up Rest	4026708
	Spring	49247101
	Adjustment Screw	5033722
	Spindle	53597211
	Spring	4925709
	Cushion Ring	5305700
	Thrust Washer	53210001
	Ball Race Assy	52027007
	Thrust Washer	53210001
	Cushion Ring	5305016
	Motor Loom Assy	2181703
	Micro Switch	2181703
	Common Casing Items	
	Cartridge V100	2511711
	Stylus for V100	2513702
	Plug 3-way	2683701
	Contact	2681701
	Terminal Strip 2-way	2906713

LEATHER SKIVERS – FOR:
GC1510PM.

Door Hinges:
GC1410PW. 417-17073

8699

Test Procedure Data

1. Test Equipment Required

Multi-range testmeter, AVO 8 or similar, 20,000 ohms/volt.

Audio signal generator, 20Hz–20kHz, output 1mV–6 volts (600 ohms) sine wave.

FM signal generator, 87–108 MHz FM & AM modulation.

AM signal generator, covering 200–1630kHz.

Valve Voltmeter.

Oscilloscope.

Stereo encoder (Philips Service Coder or similar).

Output meter set to 8 ohms load.

2. Tuner Section – Circuit Description

a. Receiver Power Supply

The FM receiver section, including the stereo decoder, is fed by a series voltage regulator (TR261) whose function is two-fold:

a. To provide the correct working voltage for the Receiver I.C.'s (I.C. 401 & I.C. 402).

b. To provide the highly stable tuning voltage required by the vari-cap tuner.

The series voltage regulator operated as follows:

Rectified and smoothed D.C. from the mains transformer. via D261 & C604 is applied to the collector of regulator transistor TR261 and, via R262, to 16V Zener diode D262 which provides a reference voltage to the base of TR261. As the base-emitter junction will maintain this reference voltage at the emitter, the output H.T. feed will be maintained at a constant voltage. This regulated H.T. supply is fed from the emitter of TR261, to the tuner section.

The precise voltage required by the varicap tuner is derived from the H.T. supply produced by D261 & C604 and regulated by zener diode Z401 via R431.

b. FM Circuit

The SRX 20 chassis employs a prealigned, 3-stage, F.E.T. input vari-cap tuner, the tuning range of which is controlled by a potentiometer coupled with the AM tuning gang.

The 10.7MHz I.F. output from the tuner feeds into a ceramic filter (CF401) followed by a discrete I.F. amplifier TR404 which in turn feeds into a second ceramic filter (CF402).

The signal from the second ceramic filter feeds into IC401 (CA3089). This provides three stages of I.F. amplification and limiting, quadrature FM detection and audio output with interstation muting, and feeds directly into stereo decoder IC402 (MC1310).

MPX Stereo Decoder Section

I.C. 402 operates in a "Phase – Lock Loop"; the only adjustment required for correct operation is to its local oscillator (by R436) and a test point is provided (pin 10) to monitor switching frequency.

When the incoming signal is modulated with a 19kHz pilot tone carrier the decoder automatically "Locks on" to it and performs the necessary switching operations to re-establish the two stereo channels. As the left and right output signals have some of the switching present, it is necessary to filter this out to prevent heterodyne whistles when tape recording and unnecessary speaker currents.

The filtering is achieved by a discrete transistor stage, in each channel, (TR405, TR406), the operation of which is controlled by a feedback network (L.H. C454, C461, R454, R466; R.H. C458, C465, R451, R468) providing a sharp cut-off above 16kHz. These discrete filter stages also handle the AM receiver audio and aid interference rejection on AM wavebands.

When receiving a "mono" transmission the 19kHz pilot tone is missing, therefore no switching is carried out by the decoder and both the left- and right-hand channels are the same.

c. AM Circuit

Tuned aerial coils, fitted to a chassis mounted ferrite rod, feed into a self-oscillating mixer/first I.F. amplifier (TR401) which is followed by additional I.F. amplifiers and detector stages (TR402, TR403). A high signal limiting diode is connected between the first and second I.F. amplifiers and overall A.G.C. is applied from detector D402 to TR401 & TR402.

Optimum local oscillator voltage is maintained over the Medium and Long wavebands by switching emitter feed-back capacitor C411 in the oscillator circuit.

3. Alignment Procedures – FM Section.

a. FM Section – I.F.

As the I.F. bandpass characteristic is tightly controlled by ceramic filters, no I.F. alignment is possible; it is necessary, however, to align the tuner module I.F. output coil resonance to match the I.F. amplifier frequency, as follows:

Tune the receiver to an F.M. signal generator, the output of which is set to any clear part of the frequency band (87.5–104MHz) and modulated to at least 70kHz deviation. With an oscilloscope connected to C446 (L.H. channel) or C448 (R.H. channel), observe the audio output. Adjust the FM tuner module I.F. output coil (mauve) for maximum output and minimum distortion, using the lowest R.F. output level from the generator that provides a satisfactory display.

Readjust the signal generator output level to 200μV and adjust the quadrature detector coil (L402) for maximim audio output. This adjustment, when accurately set, automatically assures maximum AM rejection.

b. FM Section – R.F.

As the FM tuner is a factory prealigned unit, no R.F. alignment should be attempted. However, the frequency coverage is adjustable. Two pre-set potentiometers are provided. With the tuning cursor set to the L.F. end of the scale, adjust R470 to receive 87.5MHz; with the tuning cursor set to the H.F. end of the scale, adjust R473 to receive 104MHz.

Note: There is interaction between these controls, therefore this adjustment procedure should be repeated until correct alignment is obtained.

c. MPX Stereo Decoder Adjustment

Only one adjustment is required on this decoder, which is to set the oscillator to the correct tuning frequency. Proceed as follows:

Whilst receiving a stereo encoded signal from either a transmission or a signal generator, adjust R436 until the stereo beacon L.E.D. just lights. Note position of R436. Continue to rotate R436, in the same direction, until the L.E.D. (D403) is just extinguished. Note this new position of R436. Return the adjustment to a point midway between the two previously noted positions.

Test Procedure Data -continued

4. Alignment Procedures – AM Section

a. AM Section I.F.

With the receiver set for Long Wave reception, proceed as follows:

1. Set an AM signal generator to 470kHz output and connect it to the EXTERNAL AM Aerial Socket.
2. Connect a valve voltmeter to AM receiver detector load R416.
3. Advance the signal generator output until a negative reading of approximately 0.5V is observed on the meter.
   (N.B. It may be necessary to adjust the receiver tuning so that it is clear of heterodyne whistles from other incoming transmissions).
4. Whilst adjusting the signal generator output so that it does not exceed 0.5V D.C. from the detector adjust, in turn, the I.F. output transformer T404 core and I.F. amplifier transformer cores (T402 & T403) for maximum negative output voltage.

This completes the alignment of the I.F. amplifier to 470kHz for maximum sensitivity.

b. AM Section R.F.

1. Set the receiver to Medium Wave operation and tune to the L.F. end of the scale.
2. Set an AM signal generator to 525kHz, 30% modulation and apply this signal to the EXTERNAL AM aerial socket, (output level approximately 200μV).
3. Adjust oscillator coil T401 core to receive the above signal.
4. Retune the receiver to the H.F. end of the scale.
5. Adjust the signal generator to 1630kHz, 30% modulation.
6. Adjust M.W. oscillator trimmer C418 to receive the above signal.
7. Repeat steps 2, 3, 4, 5 and 6 above until end-stops are correctly set.
8. Readjust the signal generator to 600kHz with reduced output and tune the receiver to this signal. Check the calibration on the tuning scale.
9. Adjust the position of the M.W. aerial coil on the ferrite rod for maximum output.
10. Reset the signal generator to 1400kHz and tune the receiver to this signal.
11. Adjust M.W. trimmer C606 (mounted on chassis) for maximum output.
12. Repeat steps 8, 9, 10 and 11 above until no further improvement can be made.
13. Set the receiver to Long Wave operation, tune scale cursor to coincide with the 1500 metre calibration point on the scale.
14. EITHER: Using a signal generator set to 200kHz
    OR: Using a BBC 1500 metres transmission.
    Adjust L.W. oscillator trimmer C414 to receive the above signal.
15. Adjust position of the L.W. aerial coil on the ferrite rod for maximum output.

5. Audio Amplifier

a. Circuit Description

The SRX 20 audio amplifier features the use of an Integrated Circuit (CA 3094AT) in each channel (IC201, IC231) driving discrete complementary output transistors (L.H. TR201, TR202; R.H. TR231, TR232). The integrated circuits provide the following functions:

Audio Gain

Feedback Tone Control Circuits

Output transistors driving power

b. Amplifier Checks

There are no adjustments required in the audio circuits. Should a fault condition exist, the following checks should be carried out and investigated:

1. Disconnect all loudspeaker loads.
2. Set volume control to minimum.
3. Connect two ammeters, set to read 1A, D.C., in place of the 2.5amp H.T. fuses (F601, F602) mounted on the main amp/power supply P.C.B. heatsink.
4. Switch on mains supply – each ammeter should read not more than 170mA.

IMPORTANT NOTE

The SRX 20 amplifier power supply consists of both a positive and a negative supply relative to earth. It is important, therefore, that during the above checks, both circuits are operating.

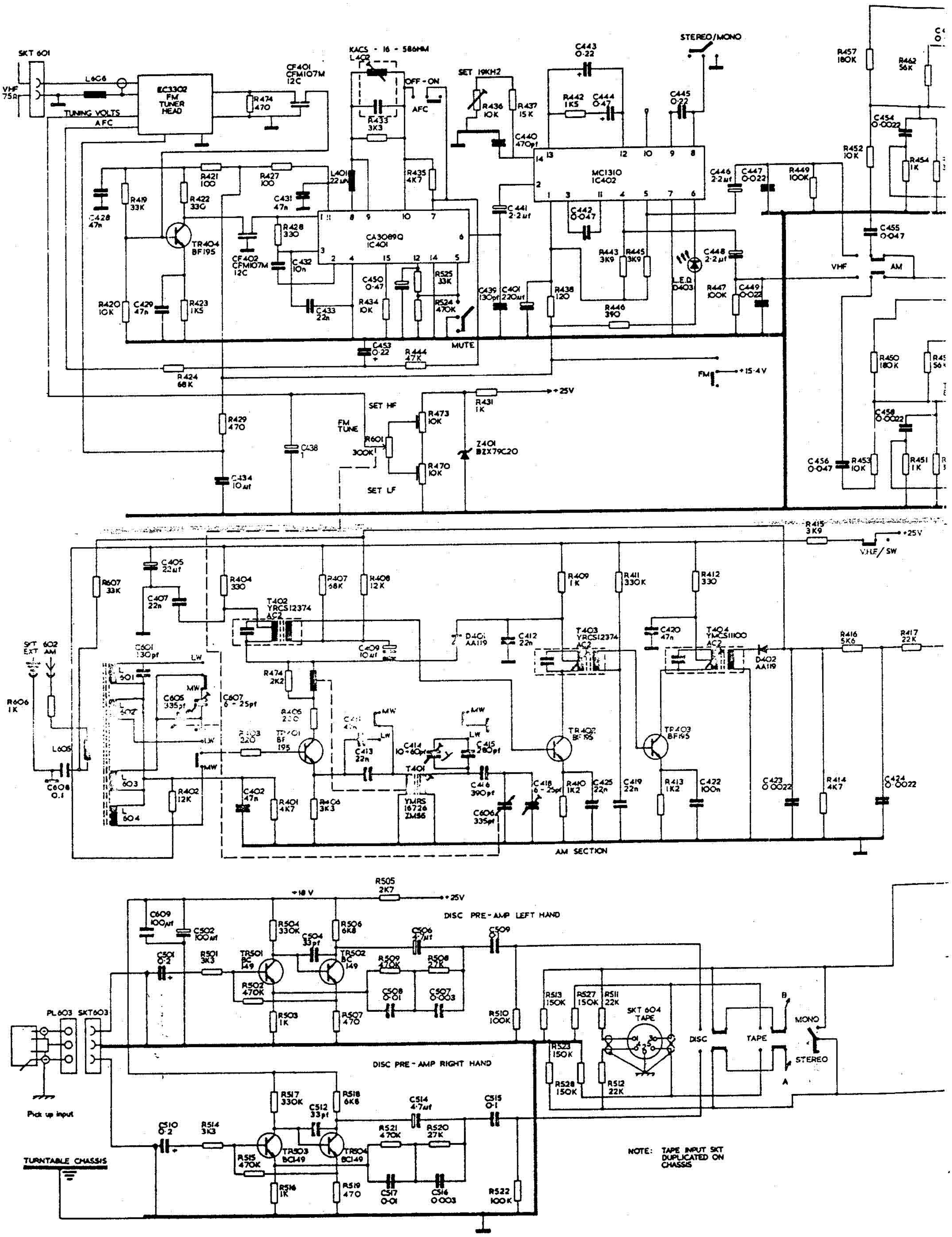
DO NOT CHECK CURRENT CONSUMPTION ACROSS ONE FUSE WHILST THE OTHER IS OPEN CIRCUIT. IF ONLY ONE AMMETER IS AVAILABLE, USE A FUSE LINK TO COMPLETE THE OTHER CIRCUIT.

5. Disconnect the meters and insert a 2.5A type F fuse to BEAB approved specification into each fuse holder.
6. With volume control set to minimum, connect a valve voltmeter, set to its lowest D.C. voltage range, across one L.H. loudspeaker output socket. Check that not more than 0.1V, positive or negative, is present at the output.
   Repeat for R.H. channel.

General Note – Amplifier

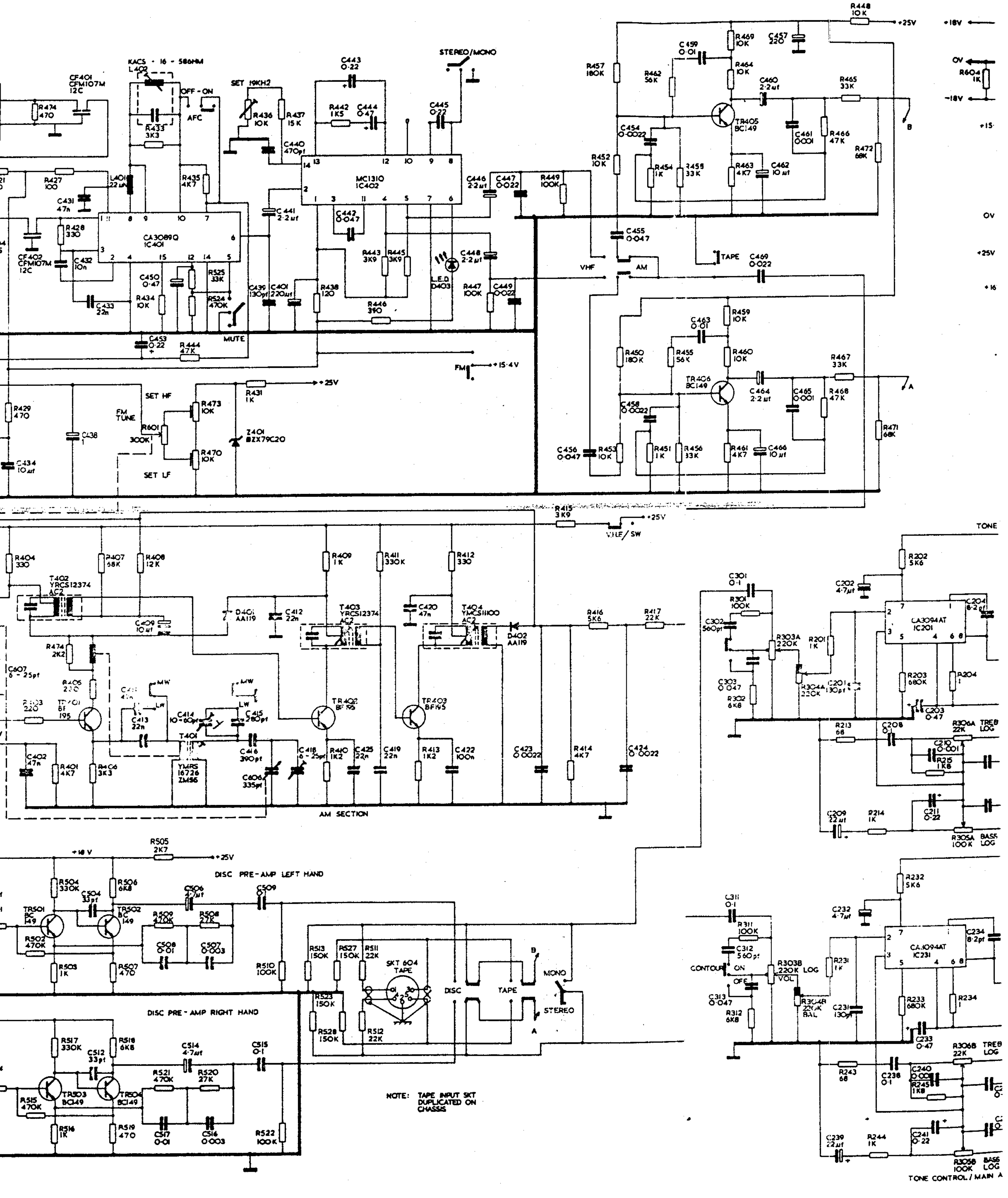
If any frequency response/power output measurements are to be made, these should only be undertaken using a loudspeaker load impedance of 8 ohms. Under normal operating conditions, however, the amplifer design is such that a 4 ohm loudspeaker load (i.e. 2 pairs of 8 ohm enclosures) may safely be used.

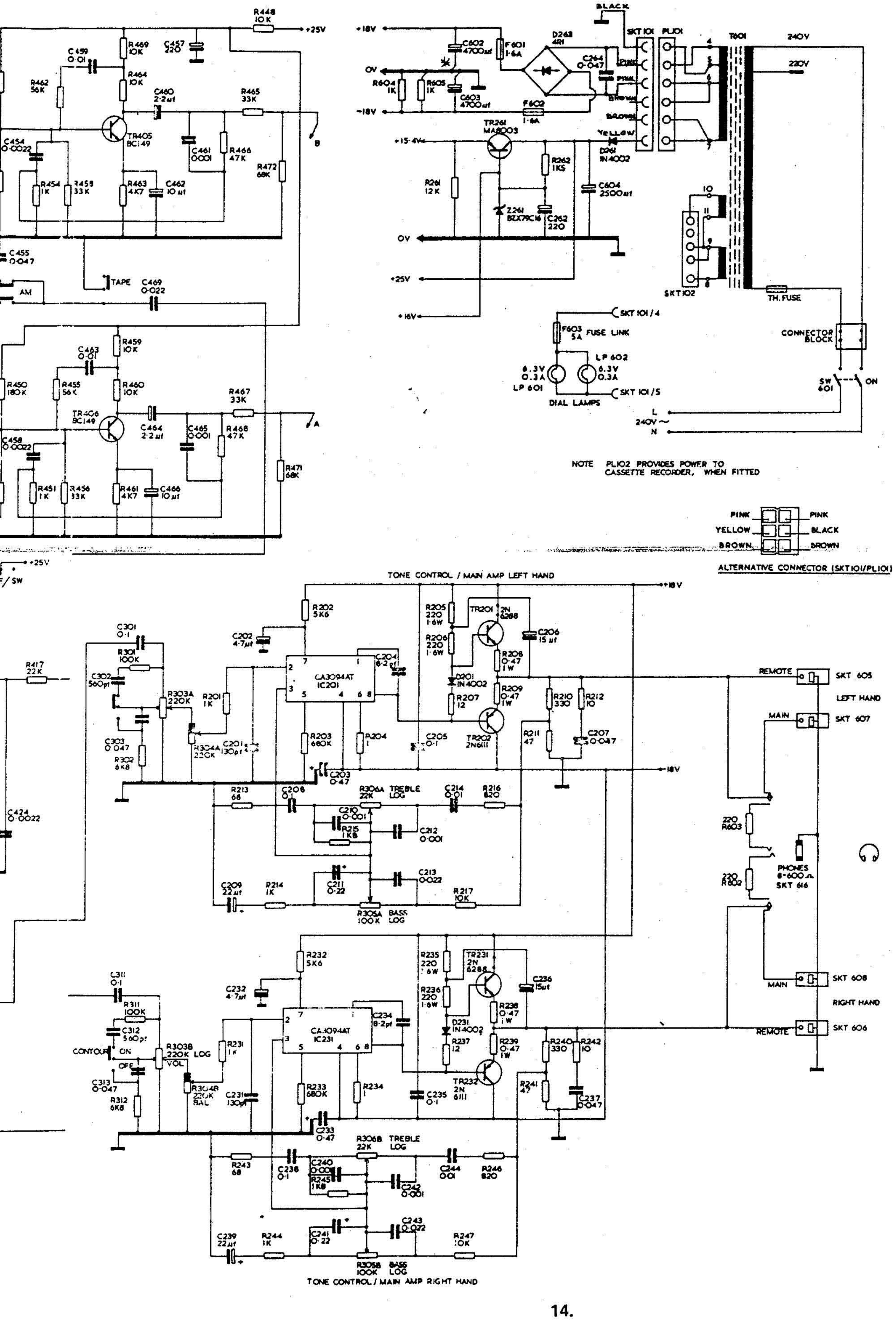
Circuit Diagram


SKT 601
VHF 75Ω
L606
EC3302 FM TUNER HEAD
TUNING VOLTS
AFC
R474 470
CF401 CFM107M 12C
KACS - 16 - 586HM
L402
R433 3K3
OFF - ON
AFC
SET 19KH2
R436 10K
R437 15K
C440 470pf
C443 0·22
R442 1K5
C444 0·47
C445 0·22
STEREO/MONO
MC1310 IC402
R457 180K
R462 56K
C454 0·0022
R452 10K
R454 1K
R421 100
R427 100
L401 22μH
R435 4K7
C441 2·2μf
C446 2·2μf
C447 0·022
R449 100K
C428 47n
R419 33K
R422 330
C431 47n
R428 330
TR404 BF195
CF402 CFM107M 12C
C432 10n
CA3089Q IC401
C442 0·047
C455 0·047
R443 3K9
R445 3K9
C448 2·2μf
L.E.D. D403
VHF
AM
R420 10K
C429 47n
R423 1K5
C433 22n
C450 0·47
R434 10K
R525 33K
R524 470K
C439 130pf
C401 220μf
R438 120
R446 390
R447 100K
C449 0·022
C453 0·22
R444 47K
MUTE
R424 68K
FM
+15·4V
R450 180K
+25V
R431 1K
SET HF
R473 10K
FM TUNE
R601 300K
R429 470
C438 1
Z401 BZX79C20
R470 10K
SET LF
C434 10μf
C458 0·0022
C456 0·047
R453 10K
R451 1K
R415 3K9
+25V
VHF / SW
C405 22μf
R607 33K
C407 22n
R404 330
R407 68K
R408 12K
R409 1K
R411 330K
R412 330
T402 YRCS12374 AC2
D401 AA119
C412 22n
T403 YRCS12374 AC2
C420 47n
T404 YMCS11100 AC2
R416 5K6
R417 22K
SKT 602 EXT AM
C601 130pf
LW
C409 10μf
D402 AA119
L 501
L 502
C605 335pf
MW
C607 6 - 25pf
R474 2K2
R606 1K
R405 220
C411 47n
MW
LW
R403 220
TR401 BF 195
C413 22n
C414 10-60pf
C415 280pf
TR402 BF195
TR403 BF195
L605
LW
MW
T401
C416 390pf
C418 6 - 25pf
R410 1K2
C425 22n
C419 22n
R413 1K2
C422 100n
C423 0·0022
R414 4K7
C424 0·0022
C608 0.1
L 603
R402 12K
C402 47n
R401 4K7
R406 3K3
YMRS 16726 ZM56
C606 335pf
L 604
AM SECTION
R505 2K7
+18 V
+25V
DISC PRE-AMP LEFT HAND
C609 100μf
C502 100μf
R504 330K
R506 6K8
C504 33pf
C506 4·7μf
C509
C501 0·2
R501 3K3
TR501 BC 149
TR502 BC 149
R509 470K
R508 27K
R502 470K
C508 0·01
C507 0·003
R513 150K
R527 150K
R511 22K
SKT 604 TAPE
B
MONO
R503 1K
R507 470
R510 100K
DISC
TAPE
PL603
SKT603
R523 150K
STEREO
DISC PRE-AMP RIGHT HAND
R528 150K
R512 22K
A
R517 330K
C512 33pf
R518 6K8
C514 4·7μf
C515 0·1
Pick up input
C510 0·2
R514 3K3
R521 470K
R520 27K
NOTE: TAPE INPUT SKT DUPLICATED ON CHASSIS
TR503 BC149
TR504 BC149
TURNTABLE CHASSIS
R515 470K
R516 1K
R519 470
C517 0·01
C516 0·003
R522 100 K

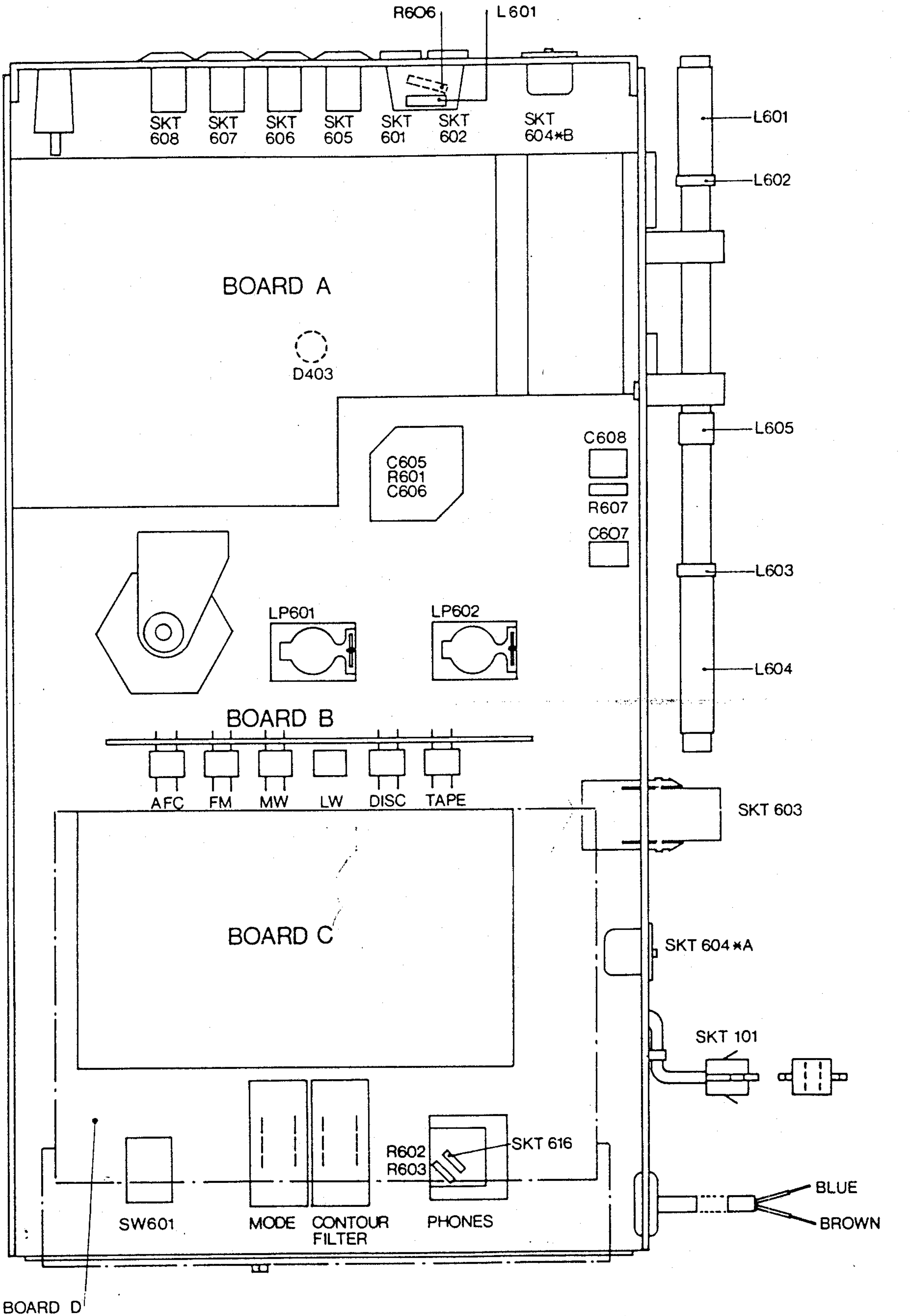
agram

* 1

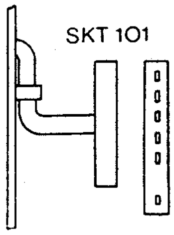

KACS - 16 - 586HM
L402
CF401 CFM107M 12C
R474 470
OFF - ON
AFC
R433 3K3
SET 19KH2
R436 10K
R437 15K
C440 470pf
C443 0·22
R442 1K5
C444 0·47
C445 0·22
STEREO/MONO
MC1310 IC402
C446 2·2µf
C447 0·022
R449 100K
R427 100
L401 22µH
C431 47n
R435 4K7
R428 330
CA3089Q IC401
CF402 CFM107M 12C
C432 10n
C441 2·2µf
C442 0·047
R443 3K9
R445 3K9
L.E.D. D403
C448 2·2µf
C450 0·47
R525 33K
R524 470K
C433 22n
R434 10K
C439 130pf
C401 220µf
R438 120
R446 390
R447 100K
C449 0·022
MUTE
C453 0·22
R444 47K
R448 10K
+25V
+18V
R469 10K
C457 220
C459 0·01
R457 180K
R462 56K
R464 10K
C460 2·2µf
R465 33K
TR405 BC149
C454 0·0022
C461 0·001
R466 47K
R472 68K
B
R452 10K
R454 1K
R455 33K
R463 4K7
C462 10µf
C455 0·047
TAPE
C469 0·022
VHF
AM
R459 10K
C463 0·01
R450 180K
R455 56K
R460 10K
R467 33K
TR406 BC149
C464 2·2µf
C465 0·001
R468 47K
A
C458 0·0022
R471 68K
C456 0·047
R453 10K
R451 1K
R456 33K
R461 4K7
C466 10µf
FM
+15·4V
R429 470
SET HF
FM TUNE
R601 300K
R473 10K
R431 1K
Z401 BZX79C20
C438 1
C434 10µf
R470 10K
SET LF
R415 3K9
VHF/SW
R404 330
R407 68K
R408 12K
T402 YRCS12374 AC2
C409 10µf
D401 AA119
C412 22n
R409 1K
R411 330K
R412 330
C420 47n
T403 YRCS12374 AC2
T404 YMCS11100 AC2
D402 AA119
R416 5K6
R417 22K
R474 2K2
C607 6 - 25pf
R405 220
R403 220
TR401 BF 195
MW
LW
C413 22n
C414 10-60pf
C415 280pf
T401 YMRS 16726 ZM56
C416 390pf
C606 335pf
C418 6 - 25pf
TR402 BF195
TR403 BF195
R410 1K2
C425 22n
C419 22n
R413 1K2
C422 100n
C423 0·0022
R414 4K7
C424 0·0022
C402 47n
R401 4K7
R406 3K3
AM SECTION
R505 2K7
+18 V
+25V
DISC PRE-AMP LEFT HAND
R504 330K
C504 33pf
R506 6K8
C506 4·7µf
C509
TR501 BC149
TR502 BC 149
R509 470K
R508 27K
R502 470K
C508 0·01
C507 0·003
R503 1K
R507 470
R510 100K
R513 150K
R527 150K
R511 22K
SKT 604 TAPE
DISC
TAPE
MONO
STEREO
R523 150K
R528 150K
R512 22K
DISC PRE - AMP RIGHT HAND
R517 330K
C512 33pf
R518 6K8
C514 4·7µf
C515 0·1
R521 470K
R520 27K
TR503 BC149
TR504 BC149
R515 470K
R516 1K
R519 470
C517 0·01
C516 0·003
R522 100K
NOTE: TAPE INPUT SKT DUPLICATED ON CHASSIS
0V
R604 1K
-18V
+15
+25V
+16
TONE
R202 5K6
C301 0·1
R301 100K
C202 4·7µf
C204 8·2pf
C302 560pf
R303A 220K
R201 1K
CA3094AT IC201
C303 0·047
R302 6K8
R304A 220K
C201 130pf
R203 680K
R204 1
C203 0·47
R213 68
C208 0·1
R306A 22K TREB LOG
C210 0·001
R215 1K8
C209 22µf
R214 1K
C211 0·22
R305A 100K BASS LOG
R232 5K6
C311 0·1
R311 100K
C232 4·7µf
C234 8·2pf
CA3094AT IC231
C312 560pf
CONTOUR
ON
OFF
R303B 220K LOG VOL
R231 1K
C313 0·047
R312 6K8
R304B 220K BAL
C231 130pf
R233 680K
R234 1
C233 0·47
R306B 22K TREB LOG
R243 68
C238 0·1
C240 0·001
R245 1K8
C239 22µf
R244 1K
C241 0·22
R305B 100K BASS LOG
TONE CONTROL / MAIN A


R448 10K
+25V
R469 10K
C457 220
C459 0.01
R464 10K
R462 56K
C460 2.2µf
R465 33K
TR405 BC149
B
C454 0.0022
C461 0.001
R466 47K
R472 68K
R454 1K
R459 33K
R463 4K7
C462 10µf
C455 0.047
TAPE
C469 0.022
AM
R459 10K
C463 0.01
R450 180K
R455 56K
R460 10K
R467 33K
TR406 BC149
C464 2.2µf
C465 0.001
R468 47K
A
C458 0.0022
R471 68K
R451 1K
R456 33K
R461 4K7
C466 10µf
+25V
F/SW
+18V
OV
-18V
C602 4700µf
F601 1.6A
D262 4R1
BLACK
SKT101
PL101
T601
240V
220V
C264 0.047
PINK
PINK
BROWN
BROWN
YELLOW
R604 1K
R605 1K
C603 4700µf
F602 1.6A
+15.4V
TR261 MA8003
D261 IN4002
R262 1K5
R261 12K
C604 2500µf
Z261 BZX79C16
C262 220
OV
+25V
+16V
10
11
SKT102
TH. FUSE
SKT 101/4
F603 5A FUSE LINK
LP 602 6.3V 0.3A
6.3V 0.3A LP 601
SKT 101/5
DIAL LAMPS
CONNECTOR BLOCK
SW 601
ON
L
240V ~
N
PINK
YELLOW
BROWN
PINK
BLACK
BROWN
ALTERNATIVE CONNECTOR (SKT101/PL101)
TONE CONTROL / MAIN AMP LEFT HAND
+18V
R202 5K6
C301 0.1
R301 100K
C202 4.7µf
R417 22K
C302 560pf
R303A 220K
R201 1K
CA3094AT IC201
C204 8.2pf
R205 220 1.6W
TR201 2N 6288
C206 15µf
R206 220 1.6W
R208 0.47 1W
D201 IN4002
R209 0.47 1W
R207 12
R210 330
R212 10
REMOTE
SKT 605
LEFT HAND
MAIN
SKT 607
C303 0.047
R302 6K8
R304A 220K
C201 130pf
R203 680K
R204 1
C205 0.1
TR202 2N6111
R211 47
C207 0.047
C203 0.47
-18V
C424 0.0022
R213 68
C208 0.1
R306A TREBLE 22K LOG
C214 0.01
R216 820
C210 0.001
R215 1K8
C212 0.001
220 R603
PHONES 8-600Ω SKT 616
220 R602
C213 0.022
C209 22µf
R214 1K
C211 0.22
R217 10K
R305A BASS 100K LOG
R232 5K6
R235 220 1.6W
TR231 2N 6288
C236 15µf
C311 0.1
C232 4.7µf
R236 220 1.6W
R238 0.47 1W
MAIN
SKT 608
RIGHT HAND
R311 100K
C312 560pf
CA3094AT IC231
C234 8.2pf
D231 IN4002
REMOTE
SKT 606
CONTOUR ON OFF
R303B 220K LOG VOL
R231 1K
R237 12
R239 0.47 1W
R240 330
R242 10
C313 0.047
R312 6K8
R304B 220K BAL
C231 130pf
R233 680K
R234 1
C235 0.1
TR232 2N 6111
R241 47
C237 0.047
C233 0.47
R306B TREBLE 22K LOG
R243 68
C238 0.1
C240 0.001
R245 1K8
C244 0.01
R246 820
C242 0.001
C243 0.022
C239 22µf
R244 1K
C241 0.22
R247 10K
R305B BASS 100K LOG
TONE CONTROL / MAIN AMP RIGHT HAND

NOTE PL102 PROVIDES POWER TO CASSETTE RECORDER, WHEN FITTED


R606
L 601
SKT 608
SKT 607
SKT 606
SKT 605
SKT 601
SKT 602
SKT 604*B
L601
L602
BOARD A
D403
L605
C608
C605
R601
C606
R607
C607
L603
LP601
LP602
L604
BOARD B
AFC
FM
MW
LW
DISC
TAPE
SKT 603
BOARD C
SKT 604*A
SKT 101
R602
R603
SKT 616
BLUE
BROWN
SW601
MODE
CONTOUR FILTER
PHONES
BOARD D

UNDERSIDE VIEW, SRX20 CHASSIS



ALTERNATIVE
6-WAY CONNECTOR
FITTED TO SOME
MODELS

Parts List~Chassis & Presentation Items

	Front Escutcheon	45437166

CONTROL KNOBS

	Knob-Tuning	41337137
	Knob-Slider	41167043
	Knob-Filter Switch	41157024
	Knob-I/P Selector	410 27165
	Button-Mains Switch	41027152
For tuning knob	Felt Washer	53257179
For tuning knob	Spring	49267209

SCALE & DRIVE MECHANISM

	Scale	33337023
	Scale Clip	49267243
	Spacer for Scale	53227077
	Pulley	52887063
	Pulley Pin/Bearing	53597193
	Pulley Spacer	53217243
	Press Stud	46277304
	Drive Spindle Bearing	52037023
For Drive Spindle	Circlip	53077052
For Flywheel	Grubscrew 2BA x ½"	50337224
	Drive Drum	52857047
	Drive Spring	49237106
	Drive Cord	32137008
	Pointer Assy	45087085

SOCKETS ETC.

	Socket Panel Escut.	45437167
SKT101	Socket 6-way	26447032
SKT601-2	Aerial Socket	26727022
SKT603	Socket 3-way	26837012
SKT604	Socket 5 Pin Din	26740039
SKT605-8	Speaker Socket	26737032
SKT616	Jack Socket . Phones .	267371187
For SKT603	Contact	26827021
For SKT101	Contact	29037053
	Lampholder Mes.	25517001

SWITCHES

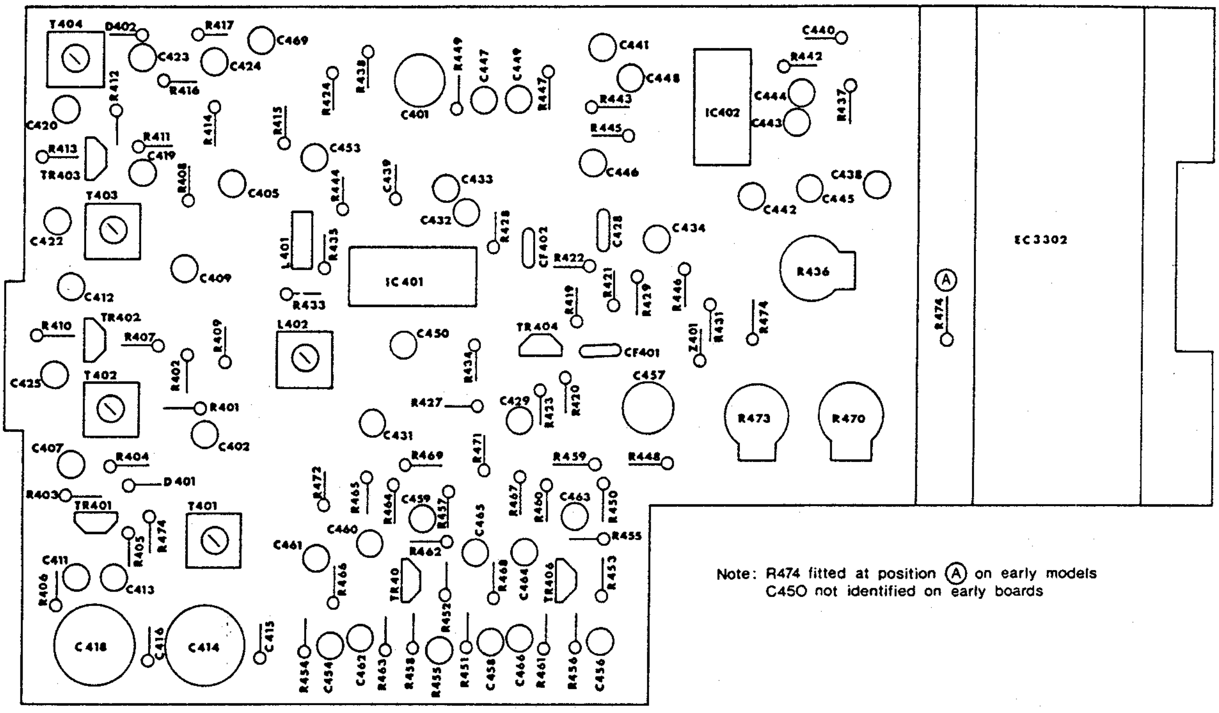
Filter	Toggle Switch	27717136
	Mains Switch	2761~~7034~~17048

MISCELLANEOUS

	Gang Insulator	46697237
For tuner PCB	Retaining Spring	49267215
	Aerial Rod Clip	25697086
	Lead Clamp	29047213
	Grommet 3/8"	32567039
	Mains Switch Insul.	46697243

ELECTRICAL

LP601-2	Lamp ~~3.5V 0.15A~~ MES 6·3V 0·3A	13447072 ✓
T601	Mains Transformer	14627027
L601-5	Ferrite Aerial Assy	15867039
C601	Cap 130P 30V 5% Poly	12150533
C605/6	Tuning Gang	12527032
C607	Trimmer 2-25P	12567051
R601	Part of Tuning Gang	
R602	Res 220R 5%	11053089
R603	Res 220R 5%	11053089
R606	Res 1K	11053107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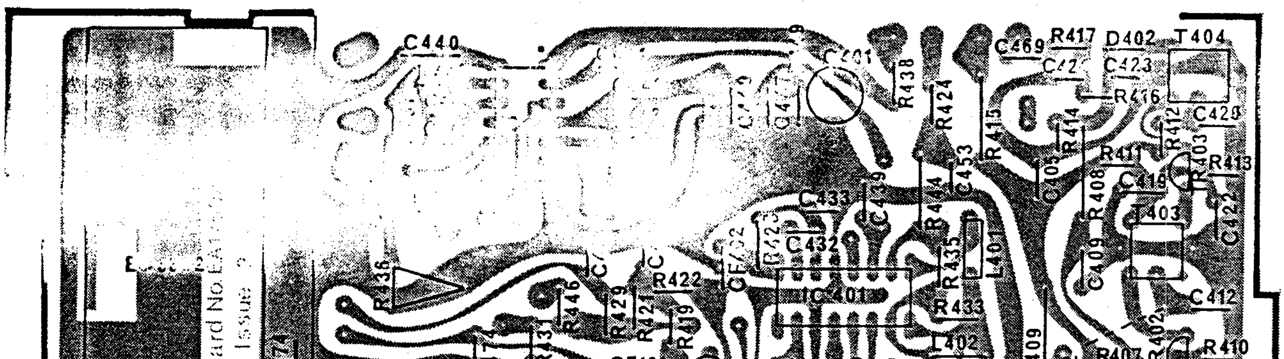
R414
R408
C405
R415
R424
R438
C401
R449
C447
C449
R447
C441
C448
R443
R445
C446
IC402
C440
R442
C444
C443
R437
C453
R444
C439
C433
C432
R428
C438
C445
C442
T403
C422
L401
R435
IC401
CF402
R422
C428
C434
R436
EC3302
C412
C409
R433
R419
R421
R429
R446
R474
TR402
R410
R407
R409
L402
C450
TR404
CF401
Z401
R431
C425
T402
R402
R401
C402
R434
R427
C429
R423
R420
C457
R473
R470
C431
C407
R404
D401
R403
TR401
R469
R471
R459
R448
R472
R465
R464
C459
R457
C465
R467
R460
C463
R430
R455
T401
R405
R474
C460
C461
R462
TR405
R468
C464
TR406
R453
C411
R406
C413
R466
R452
C418
C416
C414
C415
R454
C454
C462
R463
R458
R455
R451
C458
C466
R461
R456
C456
A

Note: R474 fitted at position Ⓐ on early models
C450 not identified on early boards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C419
R408
C405
C453
C433
C439
R444
C432
R435
L401
IC401
R433
C409
T403
C422
C412
R436
R446
R429
R421
R422
R419
CF401
TR404
R431
Z401
C457
R420
R423
C429
R434
C450
R427
C431
L402
R409
R402
R407
TR402
R410
R401
T402
C425
C402
R404
C407
Board No. EA
Issue 2
R474
R470
R473
R448
R459
R471
R469
R450
C463
R460
R467
R457
C459
R464
R465
R472
R455
C464
C465
R462
R466
C461
T401
D401
R403
TR401
R474
R405
R453
R406
R468
R452
TR405
C416
C413
C411
R406

Parts List-Tuner Board

	Tuner Panel Assy		21457166
	FM Tuner Assy		21017044

INTEGRATED CIRCUITS

IC401	IC CA3089E		20987082
IC402	IC	MC1310P	20987062

TRANSISTORS

TR401	Transistor	BF195	13040304
TR402	Transistor	BF195	13040304
TR403	Transistor	BF195	13040304
TR404	Transistor	BF195	13040304
TR405	Transistor	BC149	13040313
TR406	Transistor	BC149	13040313
D401	Diode	AA119	13040229
D402	Diode	AA119	13040229
D403	Led		13447154
Z401	Zener Diode	BZX79C20	13030699

TRANSFORMERS

T401	Osc. Transformer		15647094
T402	IF Transformer		15637204
T403	IF Transformer		15637204
T404	IF Transformer		15637205

COILS

L401	Coil 22UH		15757133
L402	Coil		15627094

CERAMIC FILTERS

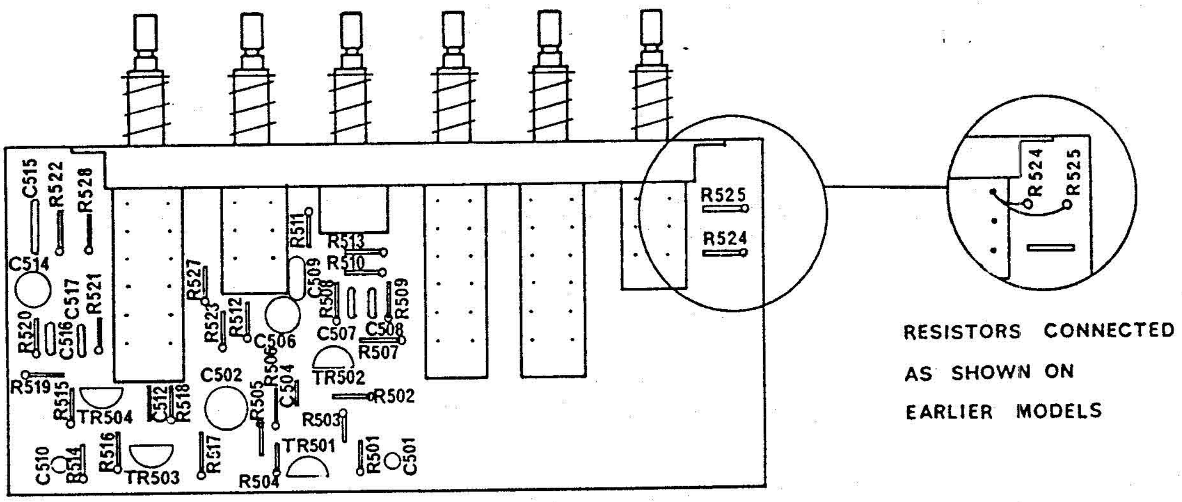
CF401	Ceramic Filter		15757132
CF402	Ceramic Filter		15757132

CAPACITORS

C401	Cap 220U	Elco	12420473
C402	Cap 47N	Cer	12247233
C405	Cap 22U 25V	Elco	12420476
C407	Cap 22N	Cer	12230103
C409	Cap 10U 25V	Elco	12420475
C411	Cap 22N	Cer	12230103
C412	Cap 22N 50V	Cer	12230103
C413	Cap 47N	Cer	12247233
C414	Cap 10-60P	Trimmer	12557048
C415	Cap 280P	Poly	12150573
C416	Cap 390P 63V 5%	Poly	12150418
C418	Cap 6-25P	Trimmer	12557049
C419	Cap 22N	Cer	12230103
C420	Cap 22N	Cer	12230103
C422	Cap 100N 50V	Mylar	12141161
C423	Cap 2N2 50V	Mylar	12147034
C424	Cap 2N2 50V	Mylar	12147034
C425	Cap 22N	Cer	12230103
C428	Cap 47N	Cer	12247233
C429	Cap 47N	Cer	12247233
C431	Cap 47N	Cer	12247233
C432	Cap 10N	Cer	12230043
C433	Cap 22N	Cer	12230103
C434	Cap 10U 25V	Elco	12420475
C438	Cap 1U		12417053
C439	Cap 130P 63V	Poly	12150533
C440	Cap 470P 63V 5%	Poly	12150553
C441	Cap 2U2 63V	Elco	12420584
C442	Cap 47N 50V	Mylar	12147019
C443	Cap 220N 35V	Tant	12417001
C444	Cap 470N	Tant	12417003
C445	Cap 220N 35V	Tant	12417001
C446	Cap 2U2 63V	Elco	12420584
C447	Cap 20N 50V	Mylar	12147039
C448	Cap 2U2 63V	Elco	12420584
C449	Cap 20N 50V	Mylar	12147039
C450	Cap 0.47U		12417003
C453	Cap 220N 35V	Tant	12417001
C454	Cap 2N 50V 20%	Mylar	12147034
C455	Cap 47N 50V	Mylar	12147019
C456	Cap 47N 50V	Mylar	12147019
C457	Cap 220U 16V	Elco	12420473
C458	Cap 2N 50V 20%	Mylar	12147034
C459	Cap 10N 50V	Mylar	12147501
C460	Cap 2U2 63V	Elco	12415164
C461	Cap 1N 50V 20%	Mylar	12147143
C462	Cap 10U 25V	Elco	12420475
C463	Cap 10N 50V	Mylar	12147501
C464	Cap 2U2 63V	Elco	12420584
C465	Cap 1N 50V 20%	Mylar	12147143
C466	Cap 10U 25V	Elco	12420473
C469	Cap 22N 50V	Mylar	12147039

RESISTORS

R401	Res 4K7 0.33W		11063125
R402	Res 12K 0.33W		11063136
R403	Res 220R 0.33W		11069089
R404	Res 330R 0.33W		11063094
R405	Res 220R 0.33W		11063089
R406	Res 3K3 0.33W		11063121
R407	Res 68K 0.33W		11063156
R408	Res 12K 0.33W		11063136
R409	Res 1K 0.33W		11063107
R410	Res 1K2 0.33W		11063109
R411	Res 330K 0.33W		11063174
R412	Res 330R 0.33W		11063094
R413	Res 1K2 0.33W		11063109
R414	Res 4K7 0.33W		11063125
R415	Res 3K9 0.33W		11063121
R416	Res 5K6 0.33W		11063127
R417	Res 22K 0.33W		11063143
R419	Res 33K 0.33W		11063147
R420	Res 10K 0.33W		11063134
R421	Res 100R 0.33W		11063081
R422	Res 330R 0.33W		11063094
R423	Res 1K5 0.33W		11063112
R424	Res 68K 0.33W		11063156
R427	Res 100R 0.33W		11063081
R428	Res 330R 0.33W		11063094
R429	Res 470R 0.33W		11063098
R431	Res 1K 0.33W		11063107
R433	Res 3K3 0.33W		11063121
R434	Res 10K 0.33W		11063134
R435	Res 4K7 0.33W		11063125
R436	Res 10K	Preset	10017059
R437	Res 15K 0.33W		11063138
R438	Res 120R 0.33W		11063083
R442	Res 1K5 0.33W		11063112
R443	Res 3K9 0.33W		11063123
R444	Res 47K 0.33W		11063152
R445	Res 3K9 0.33W		11063123
R446	Res 390R 0.33W		11063096
R447	Res 100K 0.33W		11063161
R448	Res 10K 0.33W		11063134
R449	Res 100K 0.33W		11063161
R450	Res 180K 0.33W		11063167
R451	Res 1K 0.33W		11063107
R452	Res 10K 0.33W		11063134
R453	Res 10K 0.33W		11063134
R454	Res 1K 0.33W		11063107
R455	Res 56K 0.33W		11063154
R456	Res 33K 0.33W		11063147
R457	Res 180K 0.33W		11063167
R458	Res 33K 0.33W		11063147
R459	Res 10K 0.33W		11063134
R460	Res 10K 0.33W		11063134
R461	Res 4K7 0.33W		11063125
R462	Res 56K 0.33W		11063154
R463	Res 4K7 0.33W		11063125
R464	Res 10K 0.33W		11063134
R465	Res 33K 0.33W		11063147
R466	Res 47K 0.33W		11063152
R467	Res 33K 0.33W		11063147
R468	Res 47K 0.33W		11063152
R469	Res 10K 0.33W		11063134
R470	Res 10K	Preset	10017059
R471	Res 68K 0.33W		11063156
R472	Res 68K 0.33W		11063156
R473	Res 10K	Preset	10017059
R474	Res 2K2 0.33W		11063116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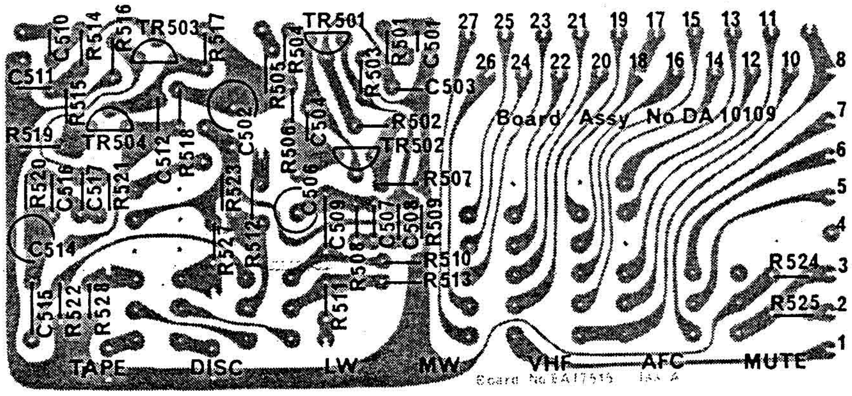
TR503
R517
R527
R523
R512
C506
R506
C502
R505
C504
R504
R511
R513
R510
R508
C509
R509
C507
C508
R507
TR502
R502
R503
TR501
R501
C501
R525
R524

RESISTORS CONNECTED AS SHOWN ON EARLIER MODELS

TOP VIEW, BOARD B
INPUT BOARD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C511
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C509
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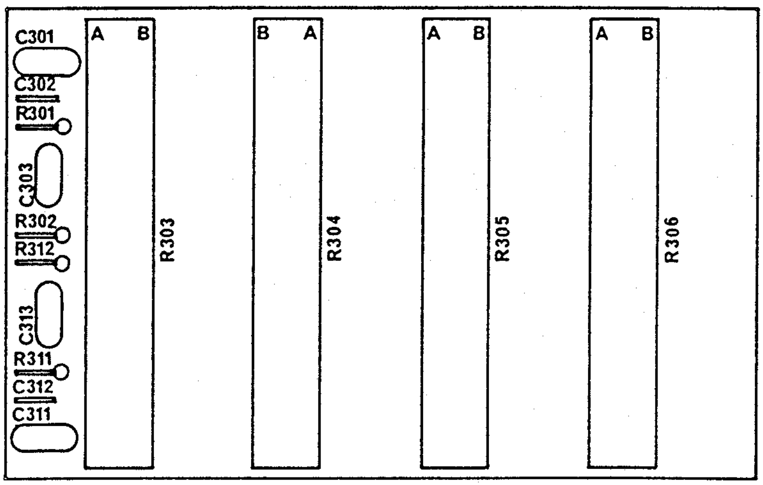
C508
R509
C514
R527
R512
R508
R510
R513
C515
R522
R528
R511
Board Assy No DA 10109
27
25
23
21
19
17
15
13
11
26
24
22
20
18
16
14
12
10
8
7
6
5
4
3
2
1
R524
R525
TAPE
DISC
LW
MW
VHF
AFC
MUTE
Board No EA17515 Iss A

UNDERSIDE VIEW, BOARD B

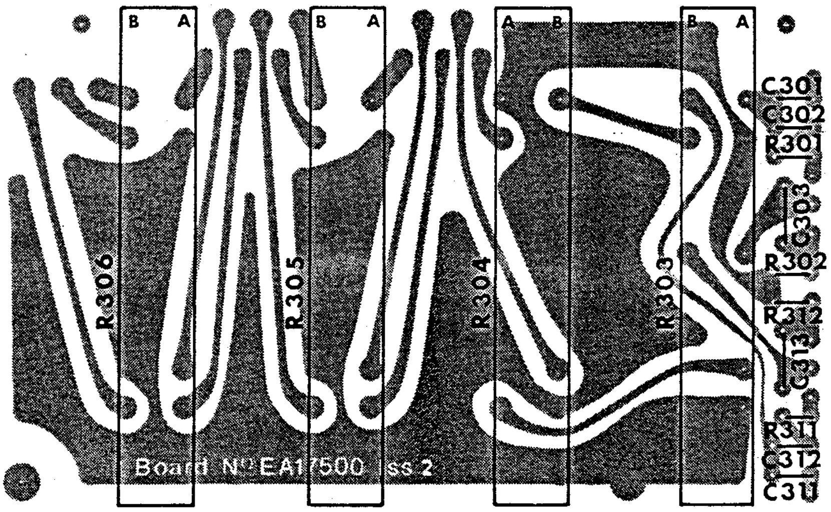
Parts List-Input Board

	Input Selector Panel		21457164
	Switch Spacer		53257181
	Switch Assy-Selector		27667028
TRANSISTORS			
TR501	Transistor	BC149	13040313
TR502	Transistor	BC149	13040313
TR503	Transistor	BC149	13040313
TR504	Transistor	BC149	13040313
CAPACITORS			
C501	Cap 220N	Tant	12417001
C502	Cap 100U	Elco	12420575
C504	Cap 33P		12237021
C506	Cap 4U7	Elco	12420494
C507	Cap 3N	Mylar	12147119
C508	Cap 10N	Mylar	12147501
C509	Cap 100N	Mylar	12141161
C510	Cap 220N	Tant	12417001
C512	Cap 33P		12237021
C514	Cap 4U7	Elco	12420494
C515	Cap 100M	Mylar	12141161
C516	Cap 3N	Mylar	12147119
C517	Cap 10N	Mylar	12147501

RESISTORS		
R501	Res 3K3 0.33W	11063121
R502	Res 470K 0.33W	11063178
R503	Res 1K 0.33W	11063107
R504	Res 330K 0.33W	11063174
R505	Res 2K7 0.33W	11063114
R506	Res 6K8 0.33W	11063129
R507	Res 470R 0.33W	11063098
R508	Res 27K 0.33W	11063145
R509	Res 470K 0.33W	11063178
R510	Res 100K 0.33W	11063161
R511	Res 22K 0.33W	11063089
R512	Res 22K 0.33W	11063089
R513	Res 150K 0.33W	11063165
R514	Res 3K3 0.33W	11063121
R515	Res 470K 0.33W	11063178
R516	Res 1K 0.33W	11063107
R517	Res 330K 0.33W	11063174
R518	Res 6K8 0.33W	11063129
R519	Res 470R 0.33W	11063098
R520	Res 27K 0.33W	11063145
R521	Res 470K 0.33W	11063178
R522	Res 100K 0.33W	11063161
R523	Res 150K 0.33W	11063165
R524	Res 470K	11063178
R525	Res 33K	11063147
R527	Res 150K 0.33W	11063165
R528	Res 150K 0.33W	11063165


C301
C302
R301
C303
R302
R312
C313
R311
C312
C311
A B
B A
A B
A B
R303
R304
R305
R306

TOP VIEW, BOARD C
TONE CONTROL BOARD


B A
B A
A B
B A
C301
C302
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C303
R302
R312
C313
R311
C312
C311
R306
R305
R304
R303
Board Nº EA17500 Iss 2

UNDERSIDE VIEW, BOARD C

Parts List-Tone Control Board

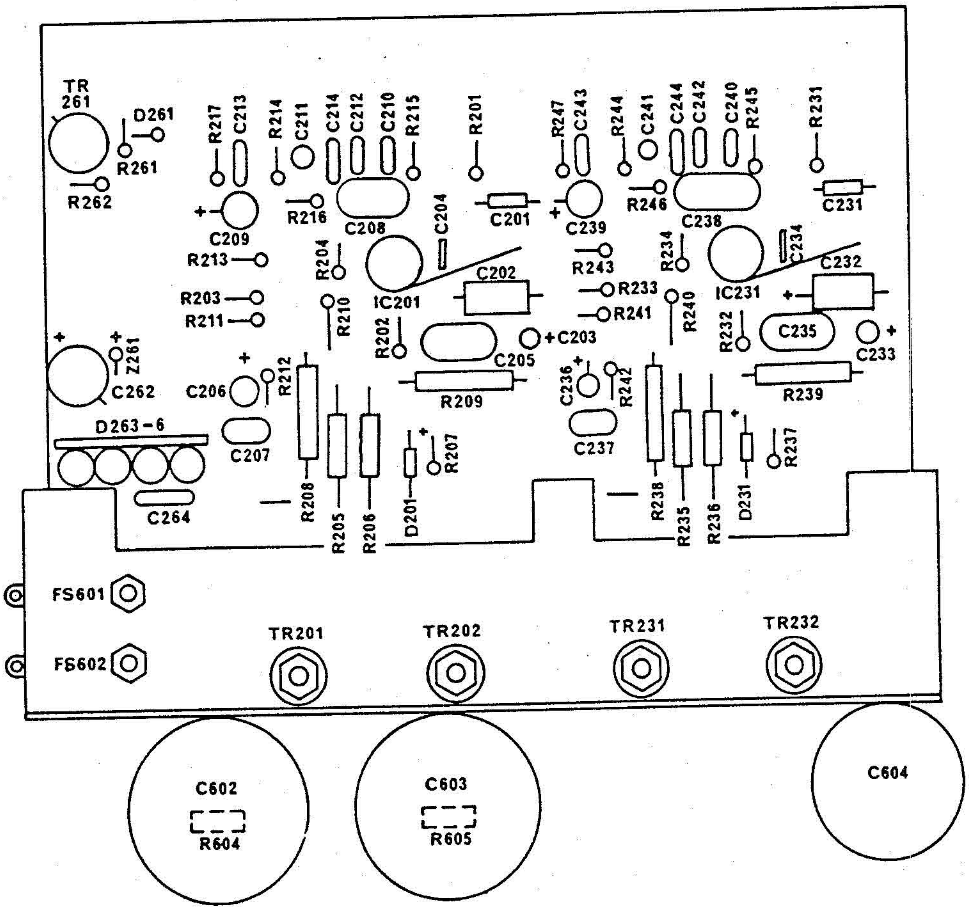
	Control Panel Assy		21457163

CAPACITORS

C301	Cap 100N 50V	Mylar	12141161
C302	Cap 560P 10%	Cer	12230126
C303	Cap 47N 50V	Mylar	12147019
C311	Cap 100N 50V	Mylar	12141161
C312	Cap 560P 10%	Cer	12230126
C313	Cap 47N 50V	Mylar	12147019

RESISTORS

R301	Res 100K 0.33W	11063161
R302	Res 6K8 0.33W	11063129
R303	Pot 220K + 220K S/Log	10517099
R304	Pot 220K + 220K Bal	10517101
R305	Pot 100K + 100K Log	10517102
R306	Pot 22K + 22K Log	10517103
R311	Res 100K 0.33W	11063161
R312	Res 6K8 0.33W	11063129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C240
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C209
R216
C208
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C201
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R213
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IC201
C202
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IC231
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C264
R208
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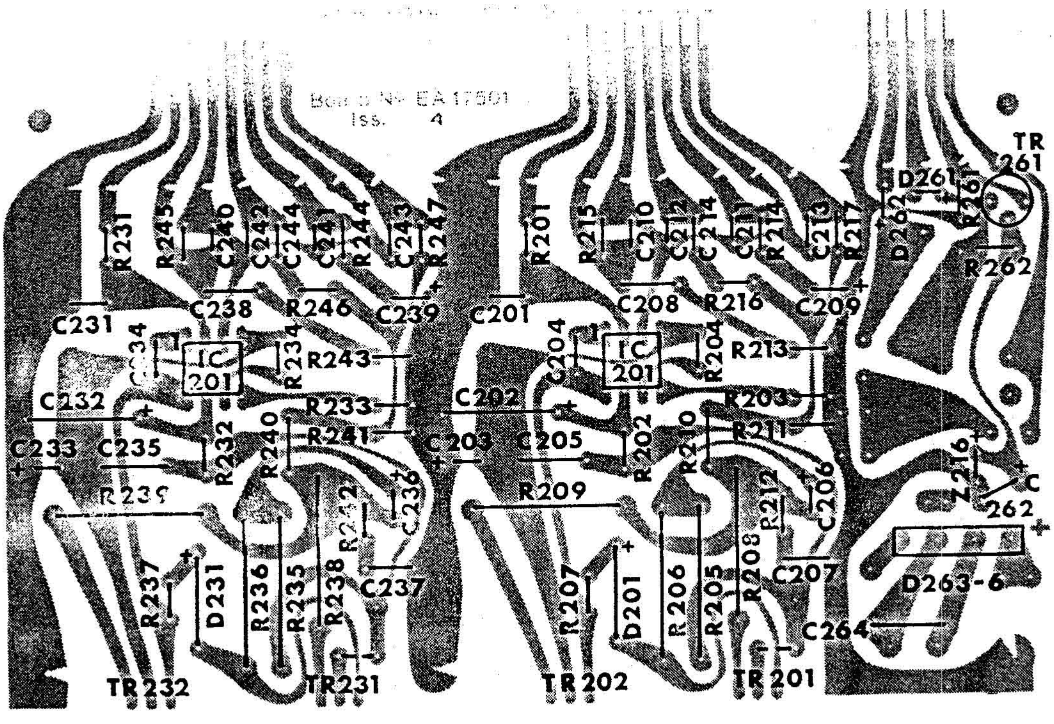
D201
R238
R235
R236
D231
FS601
FS602
TR201
TR202
TR231
TR232
C602
R604
C603
R605
C604

COMPONENT SIDE VIEW, BOARD D

MAIN AMPLIFIER AND POWER SUPPLY BOARD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R247
R201
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C210
C212
C214
C211
R214
C213
R217
C231
C238
R246
C239
C201
C208
R216
C209
C234
IC 201
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R243
C204
IC 201
R204
R213
C232
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R232
R240
C203
C205
R202
R210
Z216
C 262
R239
R242
C236
R209
R212
C206
R237
D231
R236
R235
R238
C237
R207
D201
R206
R205
R208
C207
D263-6
C264
TR232
TR231
TR202
TR201

TRACK SIDE VIEW, BOARD D

Parts List~Main Amps/Power Supply Board

	Main Amp/Power Panel	21457165
	Heatsink for IC	25547086
	Fuse Holder	25637028
For Transistors	Mica Insulator	53257071
For Transistors	Insulated Bush	53257033
	Cap	26447033

FUSES

F601	Fuse 1.6A	25320022
F602	Fuse 1.6A	25320022

INTEGRATED CIRCUITS

⊛ IC201	IC CA3094~~AT~~ BS	20987081
IC231	IC CA3094~~AT~~ BS	20987081

TRANSISTORS

TR201	Transistor	2N6288	13047556
TR202	Transistor	2N6111	13047557
TR231	Transistor	2N6288	13047556
TR232	Transistor	2N6111	13047557
TR261	Transistor	MA8003	13047535

DIODES

D201	Diode	IN4002	13030684
D231	Diode	IN4002	13030684
D261	Diode	IN4002	13030684
D262	Diode	BZX79C16	13034086
D263	Rectifier	4R	13057022

CAPACITORS

C201	Cap 130P	Styro	12150533
C202	Cap 4U7 63V	Elco	12429494
C203	Cap 470N 35V	Tant	12417003
C204	Cap 8P2	Cer	12237065
C205	Cap 100N 50V	Mylar	12141161
C206	Cap 15U 16V	Elco	12420358
C207	Cap 50N 50V	Mylar	12147019
C208	Cap 100N 50V	Mylar	12141161
C209	Cap 22U 25V	Elco	12420476
C210	Cap 1N 50V	Mylar	12147143
C211	Cap 200N 35V	Tant	12417001
C212	Cap 1N 50V	Mylar	12147143
C213	Cap 22N 50V	Mylar	12147039
C214	Cap 10N	Mylar	12147501
C231	Cap 130P	Styro	12150533
C232	Cap 4U7 63V	Elco	12420494
C233	Cap 470N 35V	Tant	12417003
C234	Cap 8P2	Cer	12237065
C235	Cap 100N 50V	Mylar	12141161
C236	Cap 15U 16V	Elco	12420358
C237	Cap 50N 50V	Mylar	12147019
C238	Cap 100N 50V	Mylar	12141161
C239	Cap 22U 25V	Elco	12420476
C240	Cap 1N	Mylar	12147143
C241	Cap 200N 35V	Tant	12417001
C242	Cap 1N	Mylar	12147143
C243	Cap 22N 50V	Mylar	12147039
C244	Cap 10N	Mylar	12147501
C262	Cap 220U 16V	Elco	12420473
C264	Cap 47N 250V	Poly	12141152
C602	Cap 4700U 25V	Elco	12470255
C603	Cap 4700U 25V		12470255
C604	Cap 2200U 40V		12470252

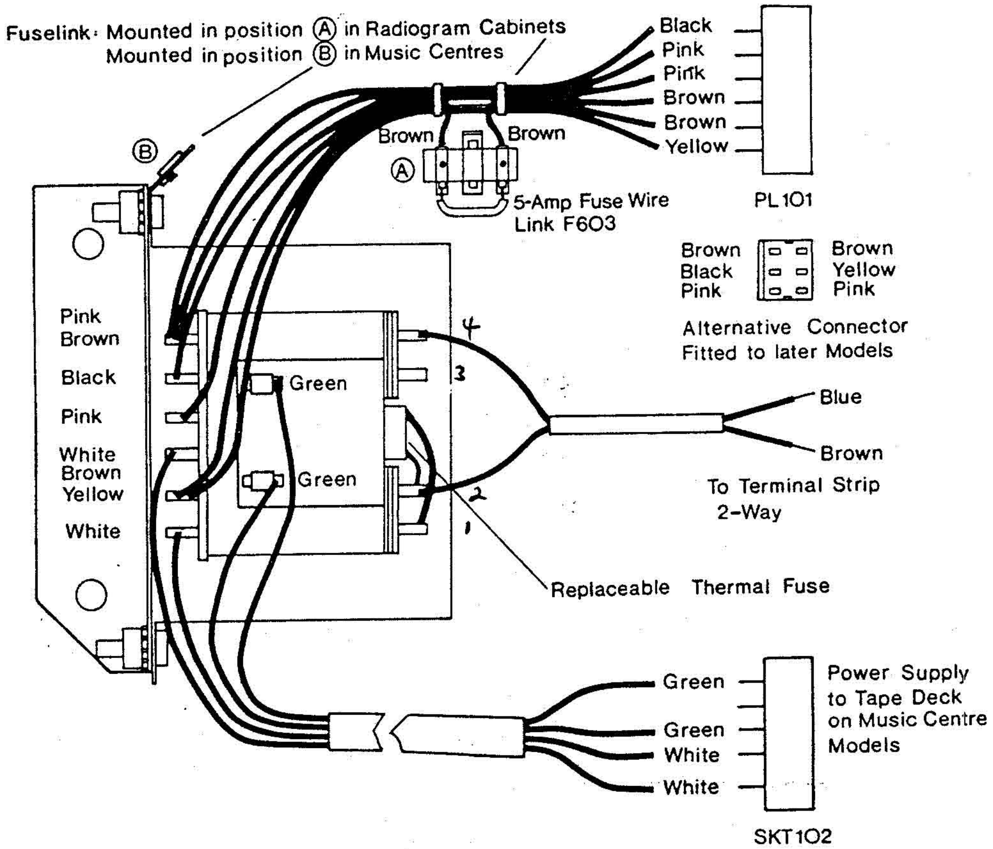
RESISTORS

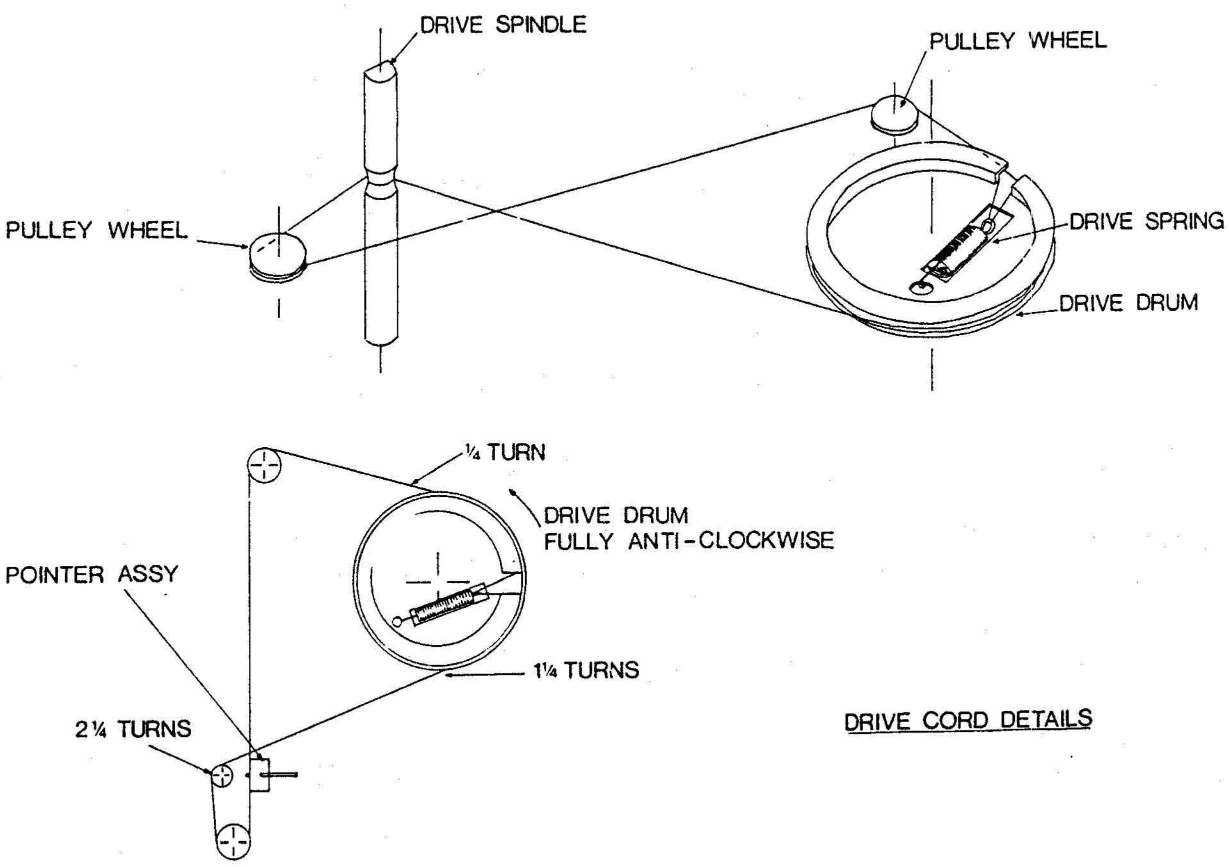
R201	Res 1K 0.33W	11063107
R202	Res 5K6	11063127
R203	Res 680K	11063183
R204	Res 1R	11063027
R205	Res 220R 1.6W 5%	11657296
R206	Res 220R 1.6W 5%	11657296
R207	Res 12R	11063056
R208	Res 0.47R 1W	11367018
R209	Res 0.47R 1W	11367018
R210	Res 330R	11063094
R211	Res 47R	11063072
R212	Res 10R	11063054
R213	Res 68R	11063076
R214	Res 1K 0.33W	11063107
R215	Res 1K8	11063114
R216	Res 820R	11063105
R217	Res 10K	11063134
R231	Res 1K 0.33W	11063107
R232	Res 5K6	11063127
R233	Res 680K	11063183
R234	Res 1R	11063027
R235	Res 220R 1.6W	11657296
R236	Res 220R 1.6W	11657296
R237	Res 12R	11063056
R238	Res 0.47R 1W	11367018
R239	Res 0.47R 1W	11367018
R240	Res 330R	11063094
R241	Res 47R	11063072
R242	Res 10R	11063054
R243	Res 68R	11063076
R244	Res 1K 0.33W	11063107
R245	Res 1K8	11063114
R246	Res 820R	11063105
R247	Res 10K	11063134
R261	Res 12K	11063136
R262	Res 1K5	11063112
R604	Res 1K	11053107
R605	Res 1K	11053107

⊛ from 24-5-77 replaced by CA3094 BS (Some CA3094 BT were used) ~~electrically~~ similar, slight connection difference (pre formed leads on Type BS). Pt No's (Dynatron) BT Version FU09150, BS Version FU09151. ~~No GES Pt No as yet~~. P.S. Part No as quoted above, No change.

T)A 2591

87081


Fuselink: Mounted in position Ⓐ in Radiogram Cabinets
Mounted in position Ⓑ in Music Centres
Ⓑ
Ⓐ
Brown
Brown
5-Amp Fuse Wire
Link F603
Black
Pink
Pink
Brown
Brown
Yellow
PL101
Brown
Black
Pink
Brown
Yellow
Pink
Alternative Connector
Fitted to later Models
Pink
Brown
Black
Pink
White
Brown
Yellow
White
Green
Green
4
3
2
1
Blue
Brown
To Terminal Strip
2-Way
Replaceable Thermal Fuse
Green
Green
White
White
SKT102
Power Supply
to Tape Deck
on Music Centre
Models


DRIVE SPINDLE
PULLEY WHEEL
PULLEY WHEEL
DRIVE SPRING
DRIVE DRUM
¼ TURN
DRIVE DRUM
FULLY ANTI-CLOCKWISE
POINTER ASSY
1¼ TURNS
2¼ TURNS

DRIVE CORD DETAILS

DYNATRON

Service Data CD780

for Dolby* System Stereo Cassette Tape Deck

fitted to models

MC1010CR, MC1610CT
GC1010PW, GC1110PM & GC1210PK, etc.

All orders, by telephone or post, should be directed to:

Combined Electronic Services Limited,
604 Purley Way,
Waddon
CROYDON CR9 4DR
England

Telephone: 01-686 0505 Telex: 262308

This Service Data should be read in conjunction with Dynatron Service Manual, code 726 17371

April 1977

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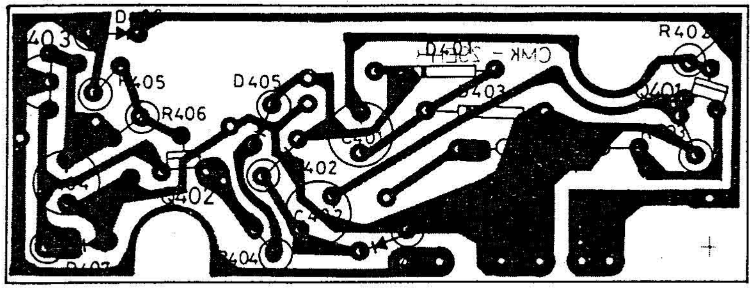
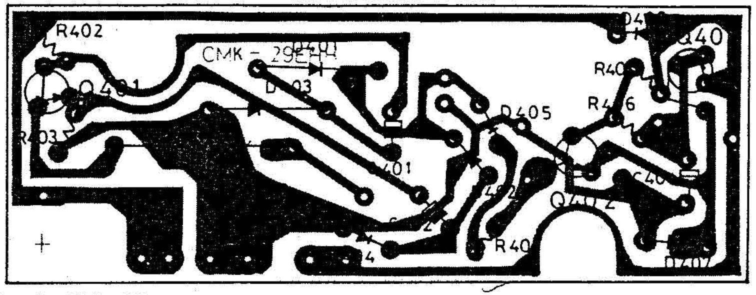
*The word 'Dolby' and the 'Double-D' symbol are trade marks of Dolby Laboratories Inc.

DOLBY SYSTEM ®

Auto-Stop P.C.B.


D402
Q403
R405
D405
R406
CMK - 29EH
D403
R402
Q401
C401
Q402
R402
C402
R404
D407

Component Side View

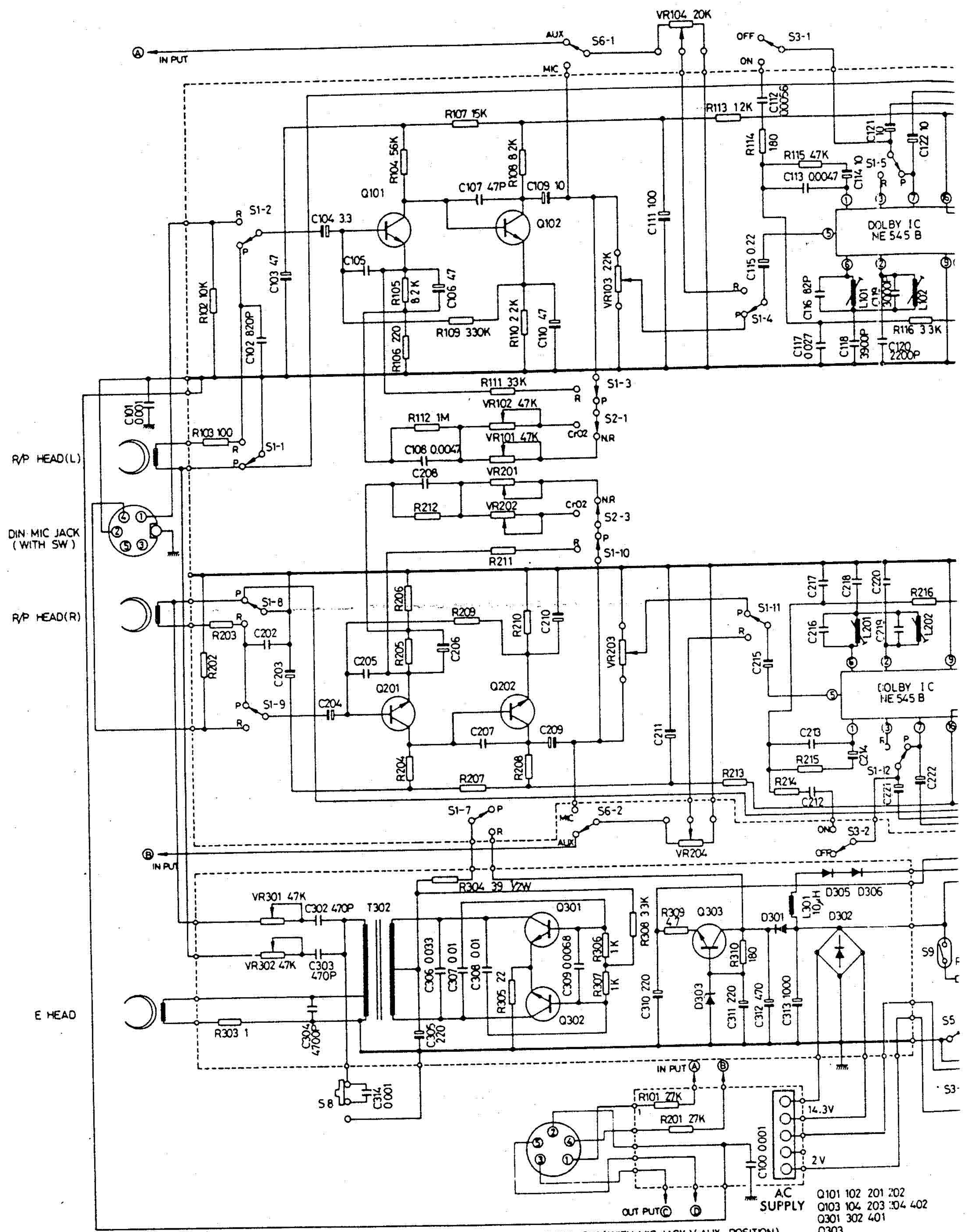

R402
CMK - 29EH
D404
Q401
D403
Q403
R405
D405
R406
R403
C401
C402
Q402
R404
D407

Track Side View

Parts List - Auto-stop P.C.B.

Ref.	Description	Code No.	Ref.	Description	Code No:
	Auto Stop Panel Assy		C401	Capacitor 47u 16V	12427182
Q401	Transistor 2SC458C	13047224	C402	Capacitor 47u 16V	12427182
Q402	Transistor 2SC458D	13044257	C403	Capacitor 100u 10V	12447005
Q403	Transistor 2SD468C	13047636			
D401	Diode IN60	13037049	R401	Resistor 15K	11063138
D402	Diode IN60	13037049	R402	Resistor 5K6	11063127
D403	Diode IN60	13037049	R403	Resistor 3K9	11063123
D404	Diode IN60	13037049	R404	Resistor 5K6	11063127
D405	Diode IN60	13037049	R405	Resistor 680	11063103
D406	Diode IN4001	13037132	R407	Resistor 270	11063092
D407	Diode IN4001	13037132			

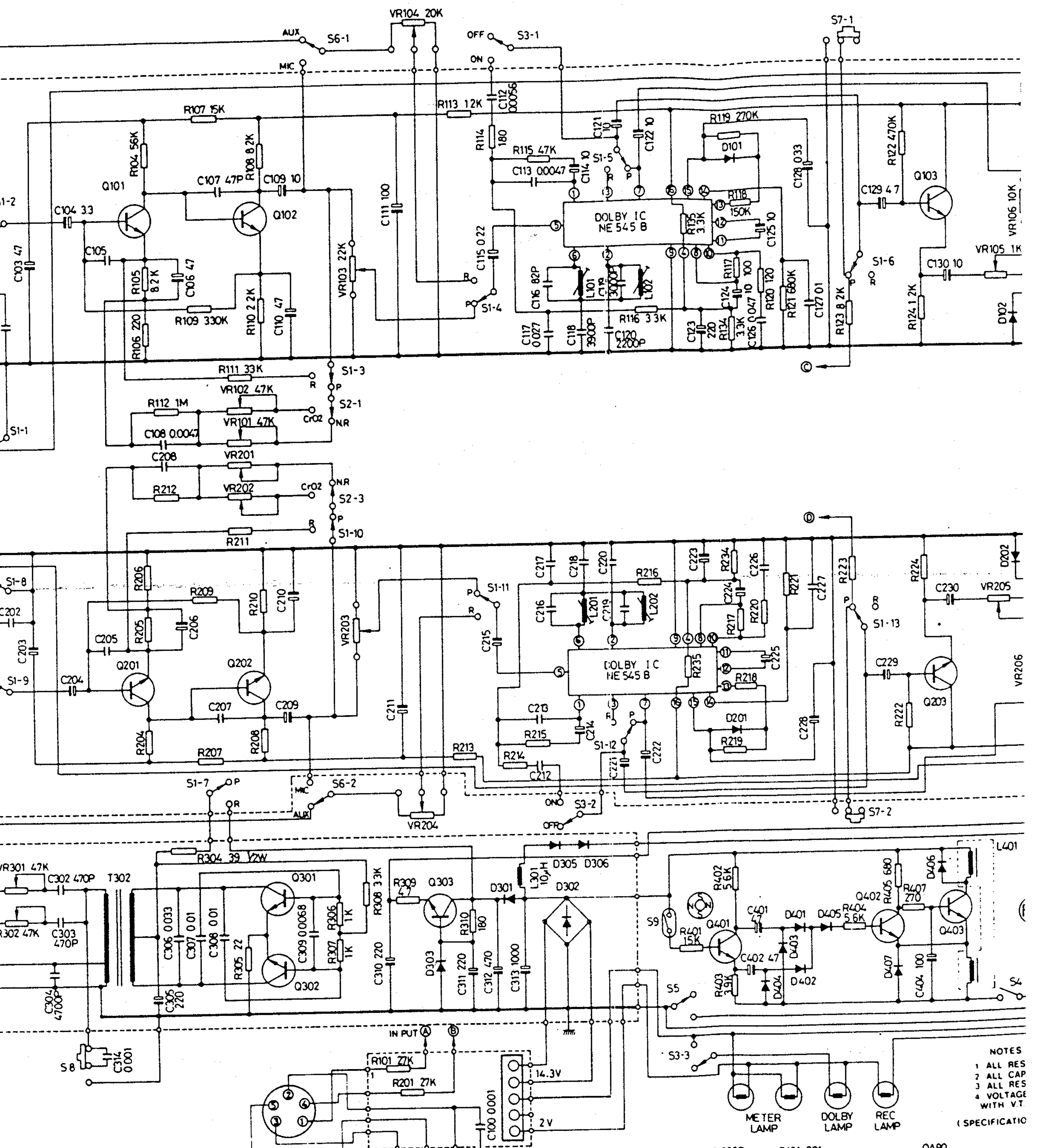
Schematic Diagram



Ⓐ IN PUT
AUX S6-1
MIC
VR104 20K
OFF S3-1
ON
R107 15K
R113 12K
C112 0.0056
R114 180
R115 4.7K
C113 0.0047
C114 10
C121 10
C122 10
S1-5
R
P
DOLBY IC NE 545 B
R104 5.6K
R108 8.2K
C107 47P
C109 10
Q101
Q102
C111 100
R S1-2
P
C104 3.3
C103 47
C105
R105 8.2K
C106 47
R102 10K
C102 820P
R109 330K
R110 2.2K
C110 47
R106 220
VR103 22K
C115 0.22
S1-4
C116 82P
L101
C119 3000P
L102
R116 3.3K
C117 0.027
C118 3900P
C120 2200P
C101 0.001
R111 33K
S1-3
VR102 4.7K
S2-1
R112 1M
VR101 4.7K
CrO2
N.R
R103 100
S1-1
R/P HEAD(L)
C108 0.0047
C208
VR201
R212
VR202
S2-3
DIN MIC JACK (WITH SW)
R211
S1-10
R/P HEAD(R)
S1-8
R203
C202
R202
C203
S1-9
C204
R206
R209
R210
C210
R205
C206
C205
Q201
Q202
C207
C209
R204
R207
R208
VR203
S1-11
C215
C211
C217
C218
C220
R216
C216
L201
C219
L202
DOLBY IC NE 545 B
C213
C214
R215
S1-12
R214
C212
C221
C222
R213
S1-7
S6-2
VR204
ON S3-2
OFF
Ⓑ IN PUT
R304 39 1/2W
VR301 4.7K
C302 470P
T302
Q301
VR302 4.7K
C303 470P
C306 0.033
C307 0.01
C308 0.01
C309 0.0068
R306 1K
R307 1K
R308 3.3K
R309 4.7
Q303
R305 22
Q302
R310 180
D303
C310 220
C311 220
C312 470
C313 1000
D301
L301 10μH
D305 D306
D302
S9
E HEAD
R303 1
C304 4700P
C305 220
S5
S8
C314 0.001
IN PUT Ⓐ Ⓑ
R101 27K
R201 27K
C100 0.001
14.3V
2V
AC SUPPLY
OUT PUT Ⓒ Ⓓ
S3-
Q101 102 201 202
Q103 104 203 304 402
Q301 302 401
Q303
Q403

S1	REC/PLAY SW (PLAY POSITION)	S6	INPUT SELECTOR SW (WITH MIC JACK)(AUX POSITION)
S2	TAPE SELECTOR SW (NR POSITION)	S7	MUTING SW
S3	DOLBY NR SW	S8	BIAS FREQUENCY SHIFT SW
S4	PAUSE SW	S9	AUTO-STOP SW
S5	PLAY SW		

Diagram


VR104 20K
AUX
S6-1
MIC
OFF
S3-1
ON
S7-1
R107 15K
R113 12K
C112 0.0056
R114 180
R115 47K
C113 0.0047
C114 10
S1-5
C121 10
C122 10
R119 270K
D101
R118 150K
C128 0.033
R122 470K
Q103
C129 4.7
VR106 10K
R104 56K
R108 8.2K
C107 47P
C109 10
Q101
Q102
C104 3.3
C103 47
C105
R105 8.2K
C106 47
R106 220
R109 330K
R110 2.2K
C110 47
C111 100
VR103 22K
C115 0.22
S1-4
DOLBY IC NE 545 B
R135 3.3K
C125 10
C116 82P
L101
C119 3000P
L102
R116 3.3K
C117 0.027
C118 3900P
C120 2200P
C123 220
R134 3.3K
C124 10
C126 0.047
R117 100
R120 120
R121 680K
C127 0.1
R123 8.2K
S1-6
C130 10
VR105 1K
R124 1.2K
D102
R111 33K
S1-3
VR102 47K
S2-1
R112 1M
VR101 47K
C108 0.0047
CrO2
N.R
S1-1
C208
VR201
R212
VR202
S2-3
R211
S1-10
R206
R209
R210
C210
C202
C203
S1-8
S1-9
R205
C206
C205
C204
Q201
Q202
C207
C209
R204
R208
R207
VR203
C211
S1-11
C215
C217
C218
C220
R216
C223
R234
C226
R221
C227
R223
R224
D202
C216
L201
C219
L202
C224
R217
R220
DOLBY IC NE 545 B
R235
C225
R218
C213
C214
R215
D201
R219
C228
C230
VR205
S1-13
C229
Q203
R222
VR206
R213
R214
C212
S1-12
C221
C222
S1-7
S6-2
VR204
S3-2
S7-2
VR301 47K
C302 470P
T302
R302 47K
C303 470P
C304 4700P
R304 39 1/2W
Q301
Q302
C306 0.033
C307 0.01
C308 0.01
R305 22
C309 0.0068
R306 1K
R307 1K
R308 3.3K
R309 47
Q303
C310 220
D303
C311 220
C312 470
R310 180
D301
L301 10μH
D305
D306
D302
C313 1000
C305 220
S8
C314 0.001
S9
R402 5.6K
R401 15K
Q401
C401 47
D401
D405
R404 5.6K
Q402
R405 680
R407 270
D406
L401
Q403
C402 47
D403
R403 3.9K
D404
D402
D407
C404 100
S5
S4
S3-3
IN PUT
R101 27K
R201 27K
C100 0.001
14.3V
2V
OUT PUT
AC SUPPLY
METER LAMP
DOLBY LAMP
REC LAMP

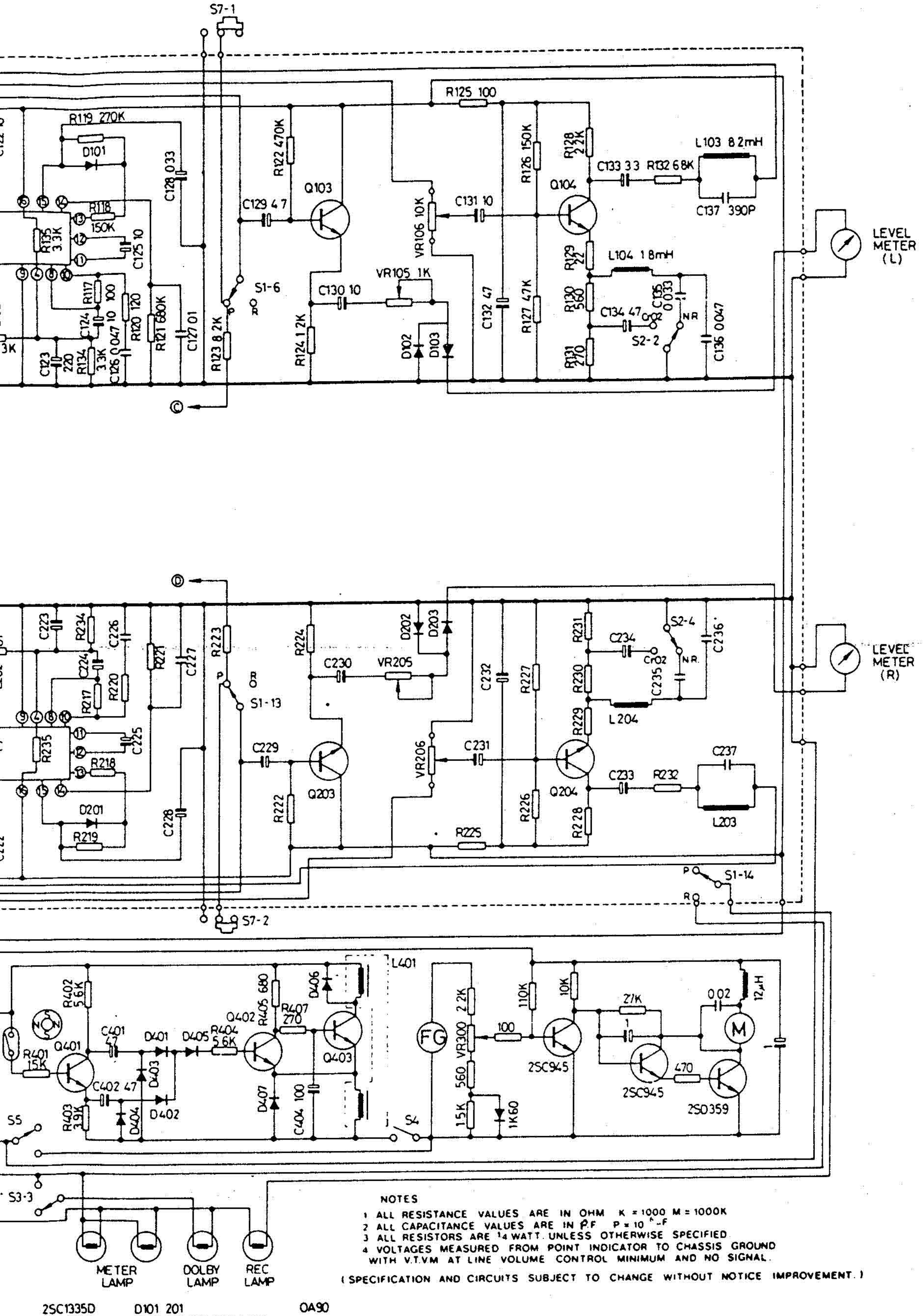
NOTES
1 ALL RES
2 ALL CAP
3 ALL RES
4 VOLTAGE
WITH V.T.

(SPECIFICATIO

Q101 102 201 202	2SC1335D	D101 201	OA90
Q103 104 203 204 402	2SC458D	D102 103 202 203 401 D402 403 404 405	1N60
Q301 302 401	2SC458C	D301 305 306 406 407	1N4001
Q303	2SC1214B	D302	W005
Q403	2SD468C	D303	RD13E-B

AY SW (PLAY POSITION)
ELECTOR SW (NR POSITION)
NR SW
SW
V

S6 INPUT SELECTOR SW (WITH MIC JACK)(AUX POSITION)
S7 MUTING SW
S8 BIAS FREQUENCY SHIFT SW
S9 AUTO-STOP SW


S7-1
R125 100
R119 270K
D101
R118
150K
R135
3.3K
C125 10
C128 0.033
R122 470K
C129 4.7
Q103
R126 150K
R128 2.2K
C133 3.3
R132 6.8K
L103 8.2mH
C137 390P
C131 10
VR106 10K
Q104
R129 22
L104 1.8mH
LEVEL METER (L)
S1-6
R117
100
C124 10
R120 120
R121 680K
C127 0.1
C130 10
VR105 1K
R130 560
C135 0.033
C134 47
S2-2
N.R
C136 0.047
C123 220
R134 3.3K
C126 0.047
R123 8.2K
R124 1.2K
D102
D103
C132 47
R127 47K
R131 270
3K
C
D
C223
R234
C226
R221
C227
R223
R224
D202
D203
R231
C234
S2-4
C236
LEVEL METER (R)
R217
C224
R220
P
R
S1-13
C230
VR205
C232
R227
R230
C235
N.R.
L204
R235
C225
R218
C229
Q203
VR206
C231
R229
Q204
C237
C233
R232
D201
R219
C228
R222
R226
R228
L203
R225
S1-14
S7-2
L401
R402 5.6K
R405 680
D406
R407 270
Q402
Q403
C401 47
D401
D405
R404 5.6K
R401 15K
Q401
C402 47
D403
D404
D402
D407
C404 100
R403 3.9K
S5
S4
FG
2.2K
110K
10K
2.7K
0.02
12μH
VR300
100
1
M
2SC945
560
470
2SC945
2SD359
15K
1K60
S3-3
METER LAMP
DOLBY LAMP
REC LAMP

NOTES

1. ALL RESISTANCE VALUES ARE IN OHM K = 1000 M = 1000K
2. ALL CAPACITANCE VALUES ARE IN μF P = 10⁻¹²F
3. ALL RESISTORS ARE ¼ WATT UNLESS OTHERWISE SPECIFIED
4. VOLTAGES MEASURED FROM POINT INDICATOR TO CHASSIS GROUND WITH V.T.V.M AT LINE VOLUME CONTROL MINIMUM AND NO SIGNAL.

(SPECIFICATION AND CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE IMPROVEMENT.)

2SC1335D	D101 201	OA90
2SC458D	D102 103 202 203 401	1N60
2SC458C	D402 403 404 405	
2SC1214B	D301 305 306 406 407	1N4001
2SD468C	D302	W005
	D303	RD13E-B

Parts List-Amplifier P.C.B.

Ref.	Description	Code No.
	Amplifier Panel	214-37066
L101/201	Coil	15627161
L102/202	Coil	15627162
L103/203	Coil 8.2mH	15757181
L104/204	Coil 1.8mH	15757182
TRANSISTORS		
101/201	Transistor 2SC1335-D	13040936
102/202	Transistor 2SC1335-D	13040936
103/203	Transistor 2SC458-D	13044257
104/204	Transistor 2SC458-D	13044257
101/201	Diode OA90	13030219
102/202	Diode IN60	13037049
103/203	Diode IN60	13037049
101/102	IC ME545B	20987089
CAPACITORS		
100/101/201	Capacitor 1n	12247084
102/202	Capacitor 820p	12154072
103/203	Capacitor 47u 16V	12427182
104/204	Capacitor 3u3 25V	12427111
105/205	Capacitor 1n	12247084
106/206	Capacitor 47u 10V	12424082
107/207	Capacitor 47p	12237097
108/208	Capacitor 4n7	12140348
109/209	Capacitor 10u 16V	12447041
110/210	Capacitor 47u 10V	12424082
111/211	Capacitor 100u 16V	12427113
112/212	Capacitor 5n6	12140237
113/213	Capacitor 4n7	12140348
114/214	Capacitor 10u 16V	12447041
115/215	Capacitor 220n 25V	12427394
116/216	Capacitor 82p	12247143
117/217	Capacitor 27n	12141145
118/218	Capacitor 3n9	12157085
119/219	Capacitor 3n	12150414
120/220	Capacitor 2n2	12150415
121/221	Capacitor 10 16V	12447041
122/222	Capacitor 10 16V	12447041
123/223	Capacitor 220u 16V	12447027
124/224	Capacitor 10u 16V	12447041
125/225	Capacitor 10u 16V	12447041
126/226	Capacitor 4n7	12140348
127/227	Capacitor 100n	12141161
129/229	Capacitor 4u7 25V	12427393
130/230	Capacitor 10u 16V	12447041
131/231	Capacitor 10u 16V	12447041
132/232	Capacitor 47u 16V	12427182
133/233	Capacitor 3u3 25V	12427111
134/234	Capacitor 47u 10V	12424082
135/235	Capacitor 33n	12141147
136/236	Capacitor 47n	12140239
137/237	Capacitor 390p	12150418

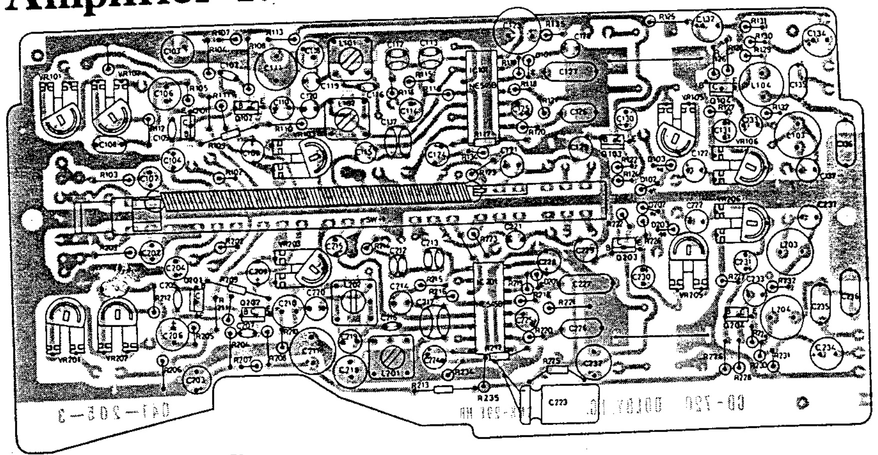
Ref.	Description	Code No.
RESISTORS		
101/201	Resistor 27K	11063145
102/202	Resistor 10K	11063134
103/202	Resistor 100	11063081
104/204	Resistor 56K	11063154
105/205	Resistor 8K2	11063132
106/206	Resistor 220	11063089
107/207	Resistor 15K	11063138
108/208	Resistor 8K2	11063132
109/209	Resistor 330K	11063174
110/210	Resistor 2K2	11063116
111/211	Resistor 33K	11063147
112/212	Resistor 1M	11063187
113/213	Resistor 1K2	11063109
114/214	Resistor 180	11063087
115/215	Resistor 47K	11063152
116/216	Resistor 3K3	11063121
117/217	Resistor 100K	11063161
118/218	Resistor 150K	11063165
119/219	Resistor 270K	11063172
120/220	Resistor 120	11063083
121/221	Resistor 680K	11063183
122/222	Resistor 470K	11063178
123/223	Resistor 8K2	11063132
124/224	Resistor 1K2	11063109
125/225	Resistor 100	11063081
126/226	Resistor 150K	11063165
127/227	Resistor 47K	11063152
128/228	Resistor 2K2	11063116
129/229	Resistor 22	11063063
130/230	Resistor 560	11063101
131/231	Resistor 270	11063092
132/232	Resistor 6K8	11063129
134/234	Resistor 3K3	11063121
101/201	Pot. 47K	10010079
102/202	Pot. 47K	10010079
103/203	Pot. 22K	10010051
104/204	Pot. 1K	10010037
105/205	Pot. 10K	10010035
104/204	Pot. 20K Log	10517124
SW1	Switch	27767047
SW2	Switch	27637011
SW3	Switch	27637011
SW4	Switch	27897068
SW5	Switch	27897088
SW6	Switch	26740228
SW7	Switch	27767048
SW8	Switch	27637011
SW9	Switch	28047019
	Meter	34727001
	Lamp	13447186
	Socket	26740228

Notes

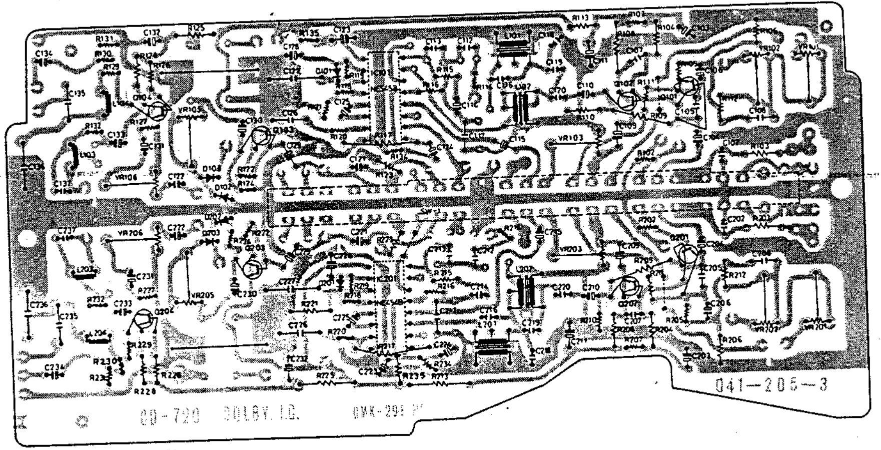
1. Power supply derived from mains transformer in main unit.
2. For instructions on Removal and Installation of the tape deck from the main unit, see Dynatron Service Manual for main unit.
3. To gain access to the mechanism, the top escutcheon moulding may be removed after first removing the 6 off screws coloured RED only.

Record/Playback head 249-17009.

Amplifier P.C.B.

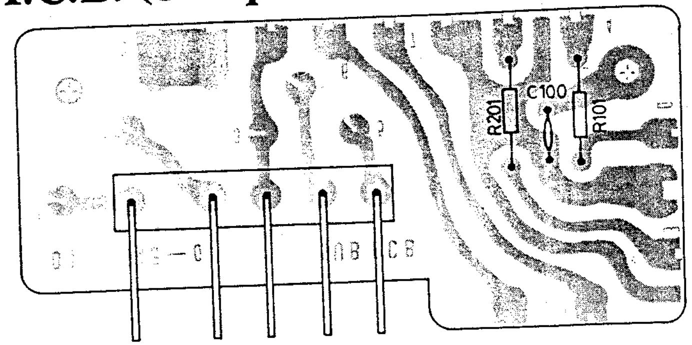


Component Side View

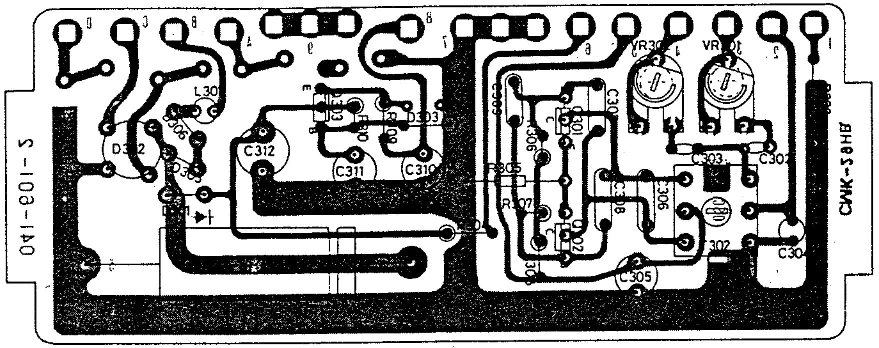


Track Side View

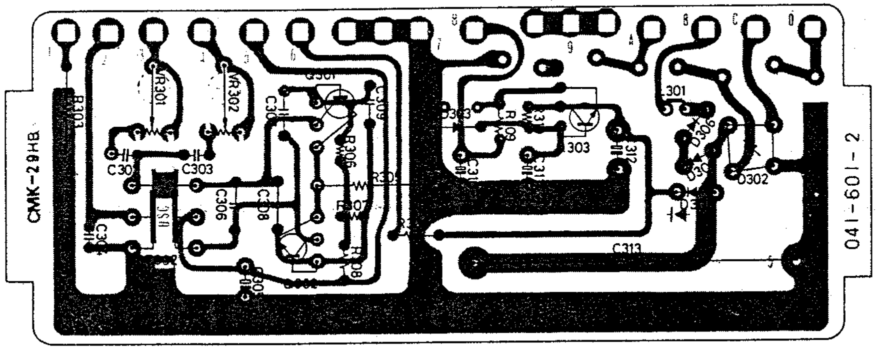
Sub P.C.B. (Component Side View)



Power Supply P.C.B.



Component Side View



Track Side View

Parts List ~ Power Supply P.C.B.

Ref.	Description	Code No.
	Power Supply Panel	
T302	Osc. Transformer	15637245
L301	Coil LF1-10uH	15757179
Q301	Transistor 2SC458-C	13047224
Q302	Transistor 2SC458-C	13047224
Q303	Transistor 2SC1214-B	13040855
D301	Diode IN4001	13037132
D302	Diode W005	13037355
D303	Diode RD13E-B	13037356
D305	Diode IN4001	13037132
D306	Diode IN4001	13037132
CAPACITORS		
C302	Capacitor 470p	12247036
C303	Capacitor 470p	12247036
C304	Capacitor 4n7	12150539
C305	Capacitor 220u 16V	12447027
C306	Capacitor 33n	12141147
C307	Capacitor 10n	12141134
C308	Capacitor 10n	12141134
C309	Capacitor 6n8	12147159
C310	Capacitor 220u 16V	12447027
C311	Capacitor 220u 16V	12447027
C312	Capacitor 470u 25V	12420622
C313	Capacitor 1000u 25V	12420419

Ref.	Description	Code No.
RESISTORS		
R303	Resistor 1R	11063027
R304	Resistor 39 ½W	11157093
R305	Resistor 22 ½W	11157089
R306	Resistor 1K	11063107
R307	Resistor 1K	11063107
R308	Resistor 3K3	11063121
R309	Resistor 4R7	11063045
R310	Resistor 180R	11063087
VR301	Pot. 47K	10010079
VR302	Pot. 47K	10010079

Specification (Extract)

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

EXTERNAL CONNECTIONS

Stereo Microphone Input:	180° 5-pin DIN pattern socket.

ELECTRICAL SPECIFICATION

Semi-conductors:	17 transistors, 22 diodes, 2 I.C.'s
Input Sensitivity (for +3VU):	Microphone: 0.25mV Line: 80mV
Input Impedance:	Microphone: 10kohm Line: 47kohm
Output Level (at +3VU):	580mV ±2dB
Output Impedance:	400ohm
Signal-to-Noise Ratio (at +3VU):	Typically –47 dB (weighted) dependent on tape used, Dolby out.
Dolby Noise Reduction Effect:	10dB Nominal
Cross Talk:	35dB
Overall Harmonic Distortion (0VU at 1kHz):	1.5% Nominal (Fe_2O_3 tape)
Frequency Response (at 30dB below indicated 0VU):	Fe_2O_3 tape: 40–12,000 Hz CrO_2 tape: 40–16,000 Hz
Bias/Erase:	AC 82kHz
Channel Balance:	3dB Nominal
Noise Reduction Circuit:	Made under licence from Dolby Laboratories Inc.

TAPE TRANSPORT

Drive Motor:	DC Servo Motor (electronic control)
Tape Drive:	Capstan Drive
Tape Speed:	4.75 cm/sec. (1 7/8 i.p.s.) ±2% DIN
Wow & Flutter:	0.18% RMS
Fast Forward time for C–60 Cassette:	<100 secs.
Rewind Time:	<100 secs.
Track Configuration:	4 track, 2 channel stereo
Record/Playback Head:	Hard permalloy laminated type
Function Keys:	Piano-key type for: Record, Rewind, Start, Fast Forward, Stop/Eject, Pause.
Auto-Stop System:	Electro-Mechanical. Operates on all drive functions at tape end

CONTROLS

Recordling Level:	Twin slider controls governing left- and right-hand channels independently.
Push-Buttons:	'Dolby NR' – Dolby IN with button in depressed position. 'Freq' – Bias oscillator 5kHz frequency shift, (Nominal). 'CrO_2' – 'Chrome' tape selected with button in depressed position.

INDICATORS

Recording Level Meters:	Twin illuminated VU type, for left- and right-hand channels.
Indicator Lamps for:	Dolby Noise Reduction (Green) Record Mode (Red)
Tape Position Indicator:	Three digit type with zero reset button

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Walker & Co. (Printers) Ltd.

726 17406

DYNATRON
Service Supplement

SRX 20 series chassis

to be read in conjunction with
Service Manual 726 17371

All orders, by telephone or post, should be directed to:
Philips Service,
604 Purley Way,
Waddon
CROYDON CR9 4DR
England
Telephone: 01-686 0505 Telex: 262308

Includes: model additions
chassis production changes
loudspeaker information
record player details

January 1979

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Casing Information

Model Additions

Model MC1610CT is identical to model MC1010CR, Norfolk Music Centre, with the exception of the cabinet, code 444 17111, which is teak veneered and matching lid handle, code 498 67039.

Models GC1310PW, GC1410PW, GC1510PM and MC1710CT are all fitted with the SRX20 chassis and CD780 stereo cassette tape deck. For Garrard record players, see below.

MC1011CR, MC1611CT

With introduction of these models the cabinet has been revised. The moulded base, code 444 57018 has been deleted and replaced by a removable wooden base.

Access, Removal and Installation

Models GC1310PW, GC1410PW, GC1510PM and MC1710CT.

These models differ in construction from those described in the service manual; the chassis, mains transformer and ancillaries are mounted on a removable motor board assembly:

Chassis Removal

1. Secure the pick-up arm to its rest and tighten the record playing unit transit screws so that the unit is in the fully clamped position.
2. Disconnect internal loudspeakers (where fitted) and aerial plugs from rear sockets panel.
3. Locate and remove the 4-off screws securing the motor board assembly through the rear of the cabinet.
4. a) GC1410PW, GC1510PM and MC1710CT - Locate and remove 2-off screws securing the fascia piece along the top front edge of the motor board. Locate and remove the 4-off screws previously hidden by the fascia piece.
   b) GC1310PW - Locate and remove the 4-off screws securing the motor board.
5. Using the motor-board finger lifts or cut-outs, lift the complete motor board assembly clear of the cabinet, passing the mains lead through the sockets panel aperture in the rear of the cabinet.
6. Place the motor board assembly so that access can be gained to the underside, ensuring that it is adequately supported. Take care that the record player pick-up arm is free from obstruction.
7. Unsolder the mains lead to the chassis from the mains transformer and unplug PL101/SKT101 inter-connecting the mains transformer secondary with the chassis.
8. Unplug record player signal lead (SKT603) and tape deck signal lead (SKT604A) from the chassis.
9. Locate and remove the 2 × M4 nuts and washers securing the chassis over mounting studs and lift the chassis clear of the underside of the motor board.

Install in reverse order. When re-connecting internal loudspeakers (not MC1710CT), ensure that they are connected to the 'MAIN' loudspeaker sockets and that the left-hand loudspeaker is connected to the L.H. socket and vice-versa.

Ancillary Equipment Removal and Installation

1. Follow steps 1, 2, 3, 4, 5 and 6 under "Chassis Removal".
2. Record player and tape deck removal and installation are generally as detailed on page 8 of the service manual.
   Note 1: The record player mains lead is now soldered to the mains transformer primary tags - see page 12.
   Note 2: The reference to a mains lead under "Install" for the tape deck should be disregarded.

Garrard Record Players

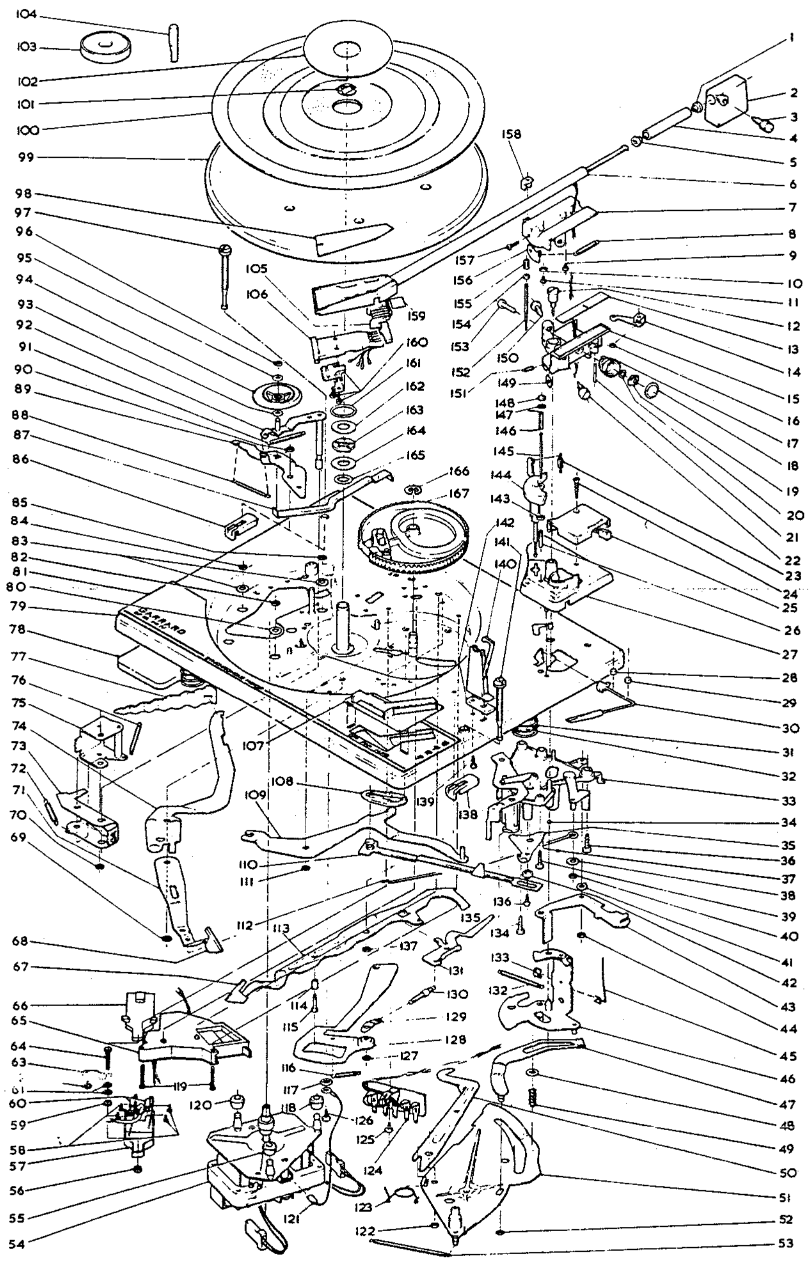
To date, four types of Garrard Record Player have been fitted to this range of models. For identification, the last digit of the Dynatron model number changes when a Record Player change is made. See chart below for model variants according to Garrard models fitted.

See pages 4–9 for exploded views and parts lists of these players.

Model Variants according to Garrard Models fitted

	Garrard Record Player				
Model Name	SP25 Mk IV	35SB	SP25 Mk V	Belt Drive (126SB)	
Burlington	RG1010PW		RG1011PW	RG1012PW	DYNATRON MODEL NUMBERS
Kensington	RG1110PM		RG1111PM	RG1112PM	
Argyll	RG1210PK		RG1211PK		
Burlington Music Centre		GC1010PW	GC1011PW		
Kensington Music Centre		GC1110PM			
Argyll Music Centre		GC1210PK			
Beaufort Music Centre		GC1310PW		GC1311PW	
Buckingham Music Centre			GC1410PW	GC1411PW	
Carlton Music Centre			GC1510PM	GC1511PM	
Norfolk Music Centre		MC1010CR	MC1011CR		
Norfolk Music Centre		MC1610CT	MC1611CT	MC1612CT	
Music Centre				MC1710CT	

Garrard SP25 Mk IV exploded view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SP25 Mk IV

Qty	Ref.	Description	Code No.
	1	Bush	532 57184
	2	Counter Balance	402 67088
	3	Special Screw	503 37219
	4	P/U Arm Extension	251 77035
	5	Bush	532 57184
	6	P/U Arm Assy	251 77033
	8	Stylus Force Spring	492 37146
	9	Self Tap Screw	502 37107
	11	Self Tap Screw	502 37107
	12	Pivot Screw	503 37221
	13	Stylus Force Plate	454 37165
	15	Pick-up Bracket Assy	402 67127
	16	Spring Clip	530 77064
	17	Stylus Force Dial	412 27002
	18	End Plate	413 77084
	19	Spring Clip	530 77065
	20	Washer	532 57128
	21	Pivot Pin	535 97209
	22	Pivot Screw	503 37222
	23	Spring	492 37147
	24	Cover Screw	502 37123
	25	Bias Compensator	691 37075
	26	Nut P/U Cue Adj	506 37047
	30	Cueing Lever Unit	402 67128
	34	Ball Bearing	520 47013
	37	Ball Bearing	520 47014
	38	Washer	532 17145
	40	Spring Clip	530 77031
	41	Spring Washer	530 80077
	44	Spring Clip	530 70047
	45	Overload Spring	492 67245
	48	Washer	532 17232
	49	Spring	492 57092
	53	Index Spring	492 37185
	54	Motor and Pulley Assy	361 67026
	55	Rubber Grommet	325 67053
	65	Motor Loom Assy	218 17038
	67	Operating Knob	411 67039
	68	Control Knob	411 67039
	69	Spring Clip	530 77031
	72	Lifting Spring	492 37148
	76	Index Spring	492 37149
	88	Spring	492 37151
	91	Tension Spring	492 37143
	93	Fibre Washer	532 57128
	94	Rubber Wheel	528 77024
	95	Plastic Washer	532 57156
	96	Spring Clip	530 70043
	97	Transit Screw	503 37199
	98	P/U Head Decor Plate	460 27059
	99	Turntable and Mat Assy	528 17105
	100	Turntable Mat	466 57022
	101	Retaining Clip	530 77048
	102	Turntable Centre Disc	460 27046
	104	Record Spindle	535 67029
	105	Contact Moulding	290 47224
	106	Slide-in Carrier	290 47225
	116	Spring	492 37152
	118	Rubber Motor Grommet	325 67053
	119	Screw	502 37206
	120	Rubber Motor Grommet	325 67053
	123	Loop Spring	492 47102
	124	Tag Strip	290 67128
	130	Return Spring	492 37153
	132	Spring	492 37154
	140	Pick-up Rest	402 67086
	146	Spring	492 47101
	151	Adjustment Screw	503 37223
	153	Spindle	535 97211
	154	Lock Nut	506 37057
	155	Spring	492 57093
	161	Cushion Ring	530 57006
	162	Thrust Washer	532 10001
	163	Ball Race Assy	520 27007
	164	Thrust Washer	532 10001
	165	Cushion Ring	530 50165

Note: Garrard SP25 Mk IV

This unit was also used in earlier Dynatron models, listed below:

HFC 72, 73, 74, 75, 76, 77, 78 and 79.
HFC 203, 204, 205, 206, 208 and 209.
RG 90, 92, 93, 94 and 95.

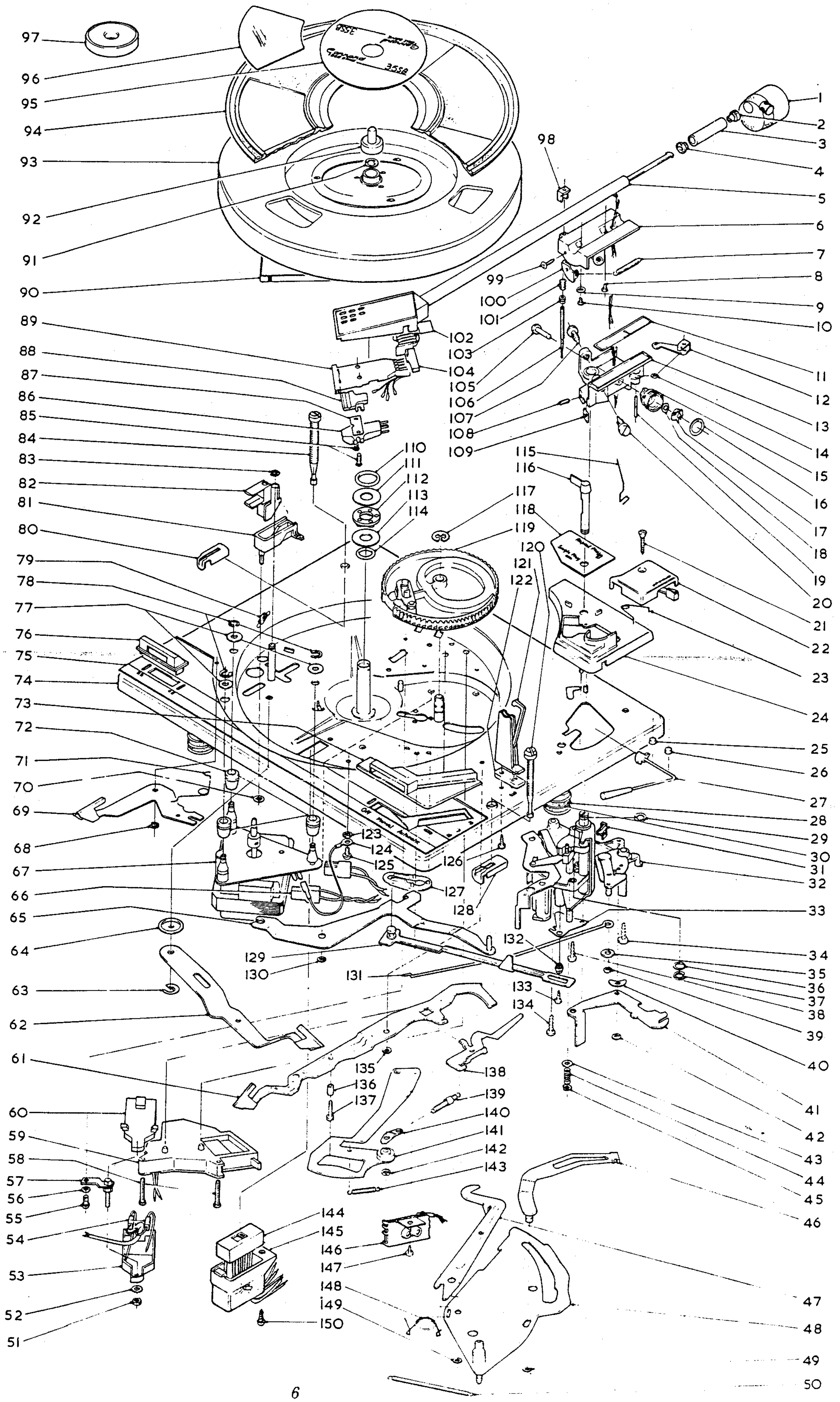
The Garrard illustration and parts list above applies to this unit in these applications.

Note, however, that in these models the pick-up cartridge fitted was the Shure M75.6s, code 251 17105 and stylus 251 37022.

35SB

Qty	Ref.	Description	Code No.
	1	Balance Weight	402 67138
2	2	Bush	532 57184
	3	Arm Extension Tube	251 77035
	5	Pick-up Arm Assy	251 77039
	7	Spring	492 37186
	11	Marker Plate	454 37169
	14	Spring Clip	530 77064
	15	Dial	412 27005
	16	End Plate	413 77121
	17	Spring Clip	530 77065
	19	Pivot Pin	535 97209
	20	Pivot Screw Assy	503 37222
	33	Friction Spring	492 67356
	50	Spring	492 37185
	59	Motor Loom Assy	218 17043
	64	Washer	532 17266
	67	Motor	361 67029
	71	Spring	492 47125
3	72	Grommet	325 67051
	75	Control Trim	454 37172
	79	Spring	492 37187
	89	Carrier	290 47225
	90	Drive Belt	358 37035
	91	Circlip	530 77084
	92	Spindle	535 67035
	93	Turntable Assy	528 17118
	94	Turntable Mat	466 57028
	101	Spring	492 57093
	104	Contact Moulding	290 47224
	110	Cushion Ring	530 57006
	111	Thrust Washer	532 10001
	112	Ball Race	520 27007
	113	Washer	532 10001
	114	Ring	530 50165
	115	Spring	492 67245
	118	Trim	454 37171
	121	Pick-up Rest Assy	402 67139
	139	Spring Assy	492 37153
	144	Switch	277 27044
	145	Block	462 77366
	146	Socket	267 37137
	148	Spring	492 47102

Garrard 35SB exploded view



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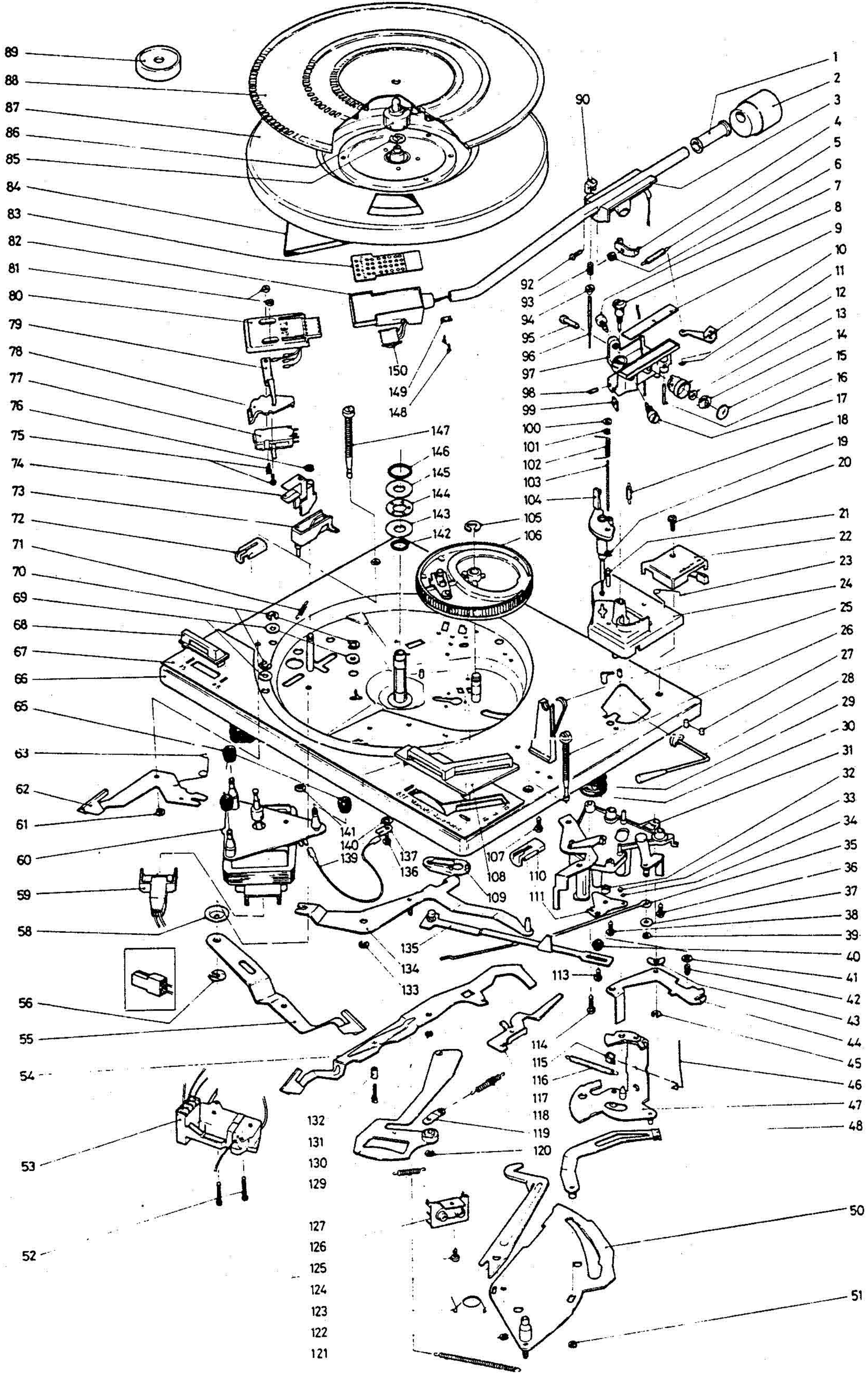
Garrard SP25 MkV exploded view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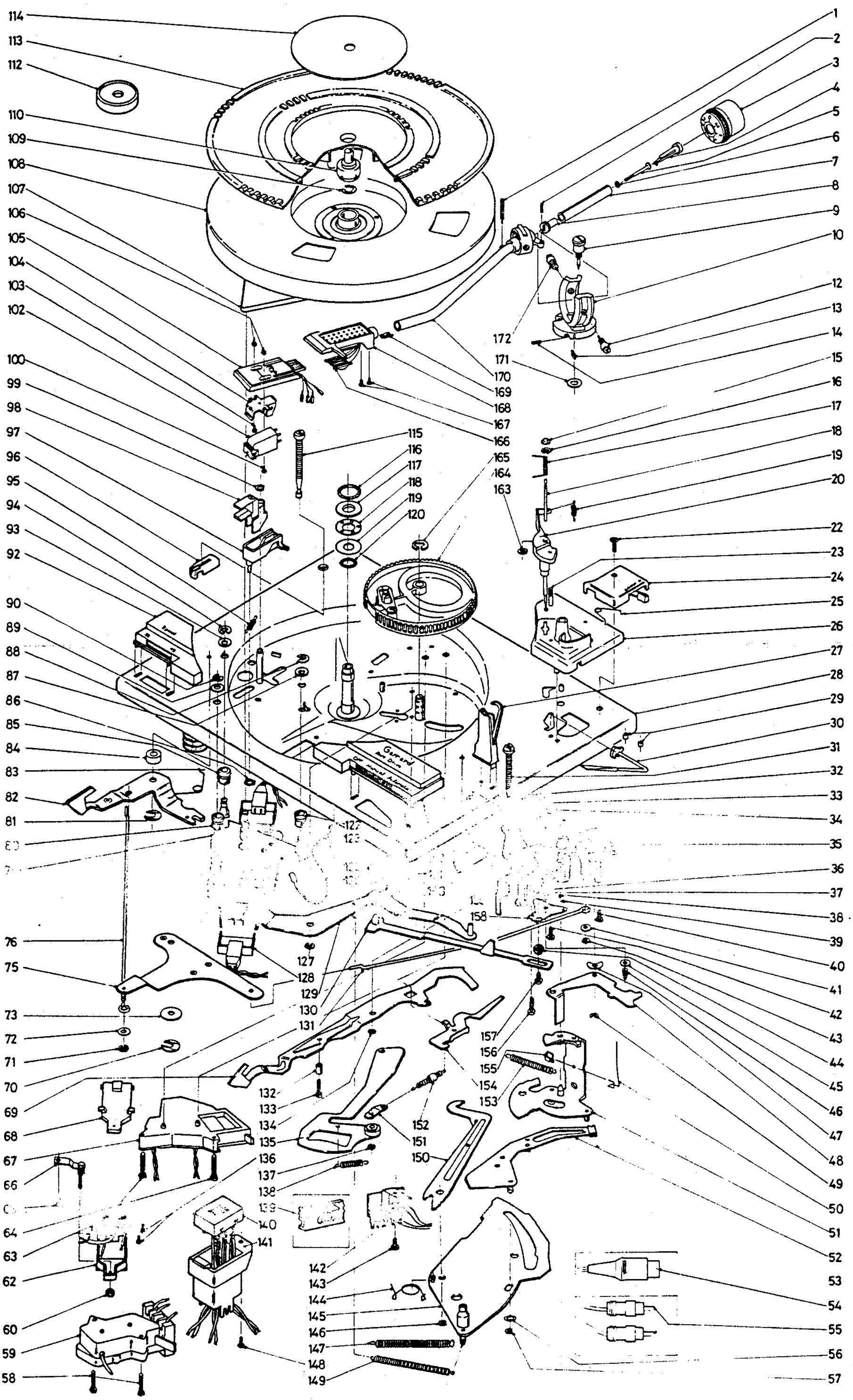
SP25 Mk V

Qty	Ref.	Description	Code No.
	1	Sleeve	251 77043
	2	Balance Weight	402 67161
	3	P/U Arm Complete	251 77044
	4	Pad	402 67162
	5	Stylus Force Spring	492 37186
	6	Sleeve	532 17319
	7	Pivot Screw	503 37245
	8	Pivot Screw	503 37221
	9	Stylus Force Plate	454 37169
	11	Spring Clip	530 77064
	12	Stylus Force Dial	412 27007
	13	Washer	532 57128
	14	Spring Clip	530 77065
	15	End Plate	413 77121
	16	Pivot Pin	535 97209
	17	Pivot Screw	503 37222
	18	Tension Spring	492 37256
	20	Cover Screw	502 37123
	21	Nut P/U cue adj.	506 37047
	23	Torsion Spring	492 47153
	25	Pick-up Rest	402 67163
	26	Transit Screw	503 37246
2	27	Bearing Pad	520 37038
	28	Cueing Lever Unit	402 67164
	32	Spacer	532 17321
	33	Ball Bearing	520 47013
	34	Ball Bearing	520 47014
	37	Washer	532 17145
	39	Spring Clip	530 77031
	41	Washer	532 17232
	42	Spring	492 57092
	43	Spring Washer	530 87071
	45	Clip	530 70047
	46	Overload Spring	492 67245
2	52	Screw	502 37206
	56	Circlip	530 77094
	59	Motor Loom	320 57043
	60	Motor & Pulley Assy	361 67032
	63	Spring	492 47125
3	65	Grommet	325 67051
	68	Speed Control Cover	444 67027
3	69	Washers	532 17225
3	70	Clip	530 77031
	71	Spring	492 37187
2	72	Clip	492 67205
	80	P/U Cartridge Slide	290 47262
	83	P/U Head Trim	460 27066
	84	Belt	358 37052
	85	Clip	530 77084
	86	Stub Spindle	535 67039
	87	Turntable	528 17118
	88	Turntable Mat	466 57032
	97	P/U Bracket Assy	402 67165
	98	Screw	503 37223
	102	Spring	492 47101
	106	Cam Assy	528 37017
	116	Spring	492 37154
	118	Spring	492 37153
	121	Tension Spring	492 37357
	123	Spring	492 47102
	126	Phono Socket	267 37138
	127	Spring	492 37152
	139	Earth Lead	321 27164
	141	Push on Fix	530 77095
	142	Cushion Ring	530 50165
2	143/145	Thrust Washer	532 10001
	144	Ball Race Assy	520 27007
	146	Cushion Rings	530 57006

BELT DRIVE TURNTABLE (126SB)

Qty	Ref.	Description	Code No.
	1	Overload Assy	503 97101
	2	Screw	503 37251
	3	Balance Weight	402 67179
	4	Retainer	402 67181
	5	Screw	502 17095
	7	Tube	251 77051
	8	Decoupler	532 67078
	9	Pivot Screw	503 97102
	10	Gimbal	402 67182
	12	Pivot Screw	503 97103
	13	Locking Washer	530 77062
	14	Adj. Screw	502 17153
	15	Cap	462 77399
	16	Clip	530 77104
	17	Spring	492 47101
	18	Plunger	535 87147
	23	Adj. Screw	506 37047
	24	Cover	691 37075
	25	Spring	492 47153
	27	Pick-up rest	402 67163
	30	Cueing Lever	402 67183
2	31	Transit Screw	503 37246
2	33	Mtg. Spring	492 57129
	36	Spring	492 57151
	37	Spacer	532 17321
	38	Ball	520 47013
	39	Ball	520 47014
	43	Clip	530 77031
	44	Collar	532 17332
	46	Spring	492 57092
	47	Spring Washer	530 87071
	49	Circlip	530 77031
	50	Overload Spring	492 67245
	56	Washer	532 57156
	57	Circlip	530 77031
	70	Spring Clip	530 77094
	71	Circlip	530 77031
	79	Motor	361 67029
3	80	Mounting Bush	325 67051
	83	Spring	492 47125
	84	Spacer	532 57239
	86	Spring Clip	530 77088
	95	Spring	492 37187
	96	Transit Clip	492 67205
	97	Lifting Cam	402 67184
	98	Speed Cam	402 67185
	99	Spring Clip	530 77105
	105	P/U Cartridge Slide	290 47262
	107	Drive Belt	358 37052
	108	Turntable	528 17118
	109	Clip	530 77084
	110	Centre Spindle	535 67039
	113	Turntable Mat	466 57032
	114	Centre Disc	460 27071
	116	"O" Ring	530 57006
	117	Thrust Washer	532 10001
	118	Ball Race	520 27007
	119	Thrust Washer	532 10001
	120	Cushion Ring	530 50165
	138	Spring	492 37152
	144	Spring	492 47102
	147	Spring	492 37282
	149	Spring	492 37257
	152	Spring	492 37153
	153	Spring	492 37154
	164	Cam Assy	528 37017
	170	P/U Arm Assy	251 77052
	172	Pivot Screw	503 97104

Belt Drive Turntable (126SB) exploded view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171
172
Garrard
Belt Drive

Parts List~Casing Items

GC1310PW

Qty	Ref.	Description	Code No.
	Walnut	Cabinet	425 87089
4		Legs	462 17229
4	For Leg	Plate	401 17238
		Lid Stay	417 17076
2		Grommet	325 67062
4		Spire Clip	492 67327
4		Spire Clip	492 67338
		Hinge	417 17119
4		Insert No. 6	505 37003
2	Black Plastic	Escutcheon	460 27056
6	For Transformer	Contact Strip	268 17014
	For Transformer	Cap	264 47033
	For Transformer	Edge Connector	290 67168
		FM Plug	264 30043
2		Loudspeaker 8" Round	240 67015
2		Loudspeaker 2¼" Round	240 37028
12	For Speaker	Clamp	401 17236
2	For Speaker	Plug	264 30041

GC1410PW

Qty	Ref.	Description	Code No.
4		Hinge	417 17073
4		Handle	498 67041
		Lid Stay (RH)	417 17114
		Lid Stay (LH)	417 17115
		Legs (Set of 4)	462 17244
2		Gasket	466 67189
		Piano Hinge	417 17126
2		Grommet	325 67026
18		Spire Clip	492 67327
		Spire Clip	492 67338
2		Magnetic Catch	417 47003
2		L/S 7" RD 8 ohm	240 50098
		Plug (FM Aerial)	264 30043

GC1510PM

Qty	Ref.	Description	Code No.
2		Hinge LH	417 17105
2		Hinge RH	417 17106
6		Handle	498 67025
		Stay LH	417 17114
		Stay RH	417 17115
2	Foam	Gasket	462 57004
	Piano	Hinge	417 17126
2		Grommet	325 67062
2		Rubber Headed Tack	462 77332
4		Spire Clip	492 67327
4		Spire Clip	492 67338
2		Spire Clip	492 67354
2		L/S 7½" -8R	240 50098
	Output	Lead Assy	321 27168

MC1610CT

Qty	Ref.	Description	Code No.
	Teak	Cabinet	444 17111
2		Hinge	417 17074
		Lid	444 27039
4	For Lid Hinge	Screw 4BA × 5/16" Csk	503 37242
4	For Lid Hinge	Washer 4BA 5/16" O/D	532 57217
4	For Lid Hinge	Domed Nut 4BA	506 37041
8	For Cabinet	Spire Clip	492 67327
		Base Moulding	444 57018
8	For Base	Screw	502 30005
8	For Base	Washer	532 17149
		Badge	459 17284
		Badge	459 17291
		Handle	498 67039
2		Grommet	325 67062

MC1710CT

Qty	Ref.	Description	Code No.
4		Castor	528 77059
		Magnetic Latch	417 47006
2		Striker Plate	466 87065
2		Piano Hinge	417 17129
2		Lid Hinge	417 17121
2		Grommet	325 67062

Loudspeakers – SRX20 series

Fret Silk see Note on P10.

LS1428CR, LS1428CT, LS5328PW, LS5428PM, LS5528PK and GC1310PW

The two-way loudspeaker system fitted to these models consists of an 8″ main unit, a 2¼″ H.F. unit and a cross-over unit for which the circuit diagram is shown below. (See Fig. 1)

This system was also fitted to earlier Dynatron models though some details, such as mounting hardware and cabinet construction may differ. These earlier models are:

LS1428 Teak }
LS1428 Walnut } Original versions without finish code letters

LS2628 and LS2728 (similar to LS5328PW and LS5428PM respectively)

LS5128 and LS5228 (similar to LS5328PW and LS5428PM respectively)

LS2928 (military-style enclosure)

LS1728 (similar to LS1428, finished in white)

RG90 and RG94 (similar to GC1310PW)

Power handling capacity of all above speakers is 50 Watts DIN

LS1128CR and LS1328CT

These models are dimensionally the same as the LS1428 type enclosure but do not have a wood moulding surrounding the baffle. The drive units comprise a 6½″ main unit and 3⅜″ H.F. unit with capacitor coupling. Power handling capacity 10 Watts DIN.

LS1618CT

This enclosure contains a 7″ twin-cone drive unit, with power handling capacity of 15 Watts.

Note—Polarity. On models fitted with connecting lead terminals (not LS1128CR, LS1328CT and LS1618CT), it is important that enclosures are connected "in phase" with each other. Connecting leads supplied have a black coding stripe or similar marking on one lead. This coded lead should be connected to the enclosure terminal identified by a red dot.
Extension leads fitted with corresponding 2-pin DIN type plugs and sockets may be used, or alternatively a colour-coded cable containing wire of cross-section not less than 0.5 mm; ensure that correct polarity is maintained.
Avoid making one connecting lead considerably longer than the other, as this may affect the stereo balance and require a large amount of adjustment of the balance control on the amplifier.

LS1225AC

Specifically for use with models GC1010PW, GC1011PW, GC1110PM and GC1210PK, this enclosure contains 2 off 8″ × 5″ loudspeakers, one for each stereo channel. The cabinet is finished in brown and fits underneath the main unit base panel.

Parts List - Loudspeakers

LS1428CR /CT Except Cabinet.

Qty	Ref.	Description	Code No.
		Cabinet Rosewood	445 17059
		Speaker 8″ 8 ohm	240 67015
		Speaker 2¼″ 8 ohm	240 37028
		Badge	459 17253
4		Clamp	401 17236
		Terminal Strip	290 67141
		Gasket	466 67162
		Lead Assy	321 27122
		Fret	445-37013

LS 1828

Speaker 8″ 8Ω	240-67029	} Peerless.
Speaker 2¼″ 8Ω	240-67015	}
X'over CAP.	124-27409	

LS5328PW

Qty	Ref.	Description	Code No.
		Cabinet Walnut	445 17057
		Speaker 8″ 8 ohm	240 67015
		Speaker 2¼″ 8 ohm	240 37028
		Terminal Strip	290 67141
		Rubber Gasket	466 67162
		Lead Assy	321 27122
		Insulating Washer	532 57182
4	Grille Fixing	Pin	535 97205

LS5428PM

Qty	Ref.	Description	Code No.
		Cabinet Mahogany	445 17058
		Speaker 8″ 8 ohm	240 67015
		Speaker 2¼″ 8 ohm	240 37028
		Terminal Strip	290 67141
		Rubber Gasket	466 67162
		Lead Assy	321 27122
4		Insulating Washer	532 57182
4	Grille Fixing	Pin	535 97205

LS5528PK

Qty	Ref.	Description	Code No.
		Cabinet Oak	445 17056
		Speaker 8″ 8 ohm	240 67015
		Speaker 2¼″ 8 ohm	240 37028
		Terminal Strip	290 67141
		Rubber Gasket	466 67162
		Lead Assy	321 27122
		Insulating Washer	532 57182
4		Pin	535 97205

GC1310PW

Qty	Ref.	Description	Code No.
		Cross Over Unit	
2		Special Washer	532 57182
2		Nut 4BA Push On	506 37046
2		Choke	157 47149
2		Cap 24u 20V	124 27408
2		Cap 4u7 20V	124 27409
2		Res 24R 1W 10%	113 67017
2		Res 2R 3W 10%	113 87133

LS1128CR

Qty	Ref.	Description	Code No.
		Badge	459 17253
		Speaker 8 ohm 6½″	240 57032
		Speaker 8 ohm 3⅜″	240 37038
		Cap 8u 63V Rev. ELCO	124 27142
		Lead Assy	321 27122

LS1328CT

Qty	Ref.	Description	Code No.
		Badge	459 17253
		L/S 6½″ 8 ohm	240 57032
		L/S 3⅜″ 8 ohm	240 37038
		Cap 8u 63V Rev. ELCO	124 27142
		Lead Assy	321 27122

LS1618CT

Qty	Ref.	Description	Code No.
		L/S 7″ 8 ohm	240 50098
		Lead Assy	321 27122
4	Grille Mtg.	Pins	535 97205
	Foam	Gasket	466 67197

LS1225AC

Qty	Ref.	Description	Code No.
		Cabinet, Brown Finish	445 17062
2		Speaker 8″ × 5″ 15 ohm	240 27094
2		2 pin Din plug, L/S	264 30041
10		Clip Spire	492 67327
4		Crimp Tag	290 37069

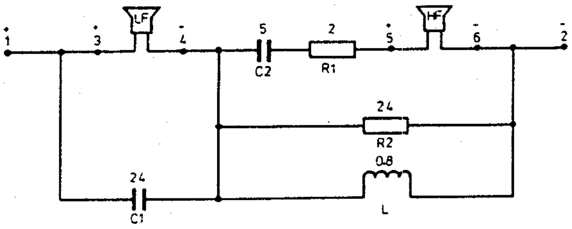


Fig. 1 Circuit Diagram - Crossover Unit.

Production Changes – SRX20 chassis

Main Amplifier I.C.'s

I.C.201 and I.C.231 have been changed during production. The original type CA 3094AT, **code 209 87081**, has been replaced by type CA 3094BS to improve handling of mains voltage fluctuations. A further selected version, type CA 3094 (89666S) was used on some sets. These are all inter-changeable, though the "BS" version should be fitted in the event of failure and preferably in pairs. Only the "BS" version is available from Philips Service, code number unchanged.

Mains Lead Wiring

The 2-way terminal strip, **code 290 67139**, has been deleted and the mains leads from the chassis and record player are now soldered directly onto the mains transformer primary. The leads must, therefore, be unsoldered prior to removal or installation of these items. (See Fig. 2).

Mains Transformer Assembly - see illustration on Page 23 of Service Manual.

During production, the tag strip and 5 amp fuse wire link on the main transformer assembly has been replaced by a fuse holder and 2.5A (type F) cartridge-type fuse. Note that this latter type fuse is fitted at position B, on the underside of the mounting bracket, for all models.

Connecting Wire Colour Coding

On the alternative connector, PL101, the black and yellow wires are transposed in this illustration.

FM Tuner Assembly

Fig. 3 shows the link wire connections between the tuner assembly and the Tuner Board.

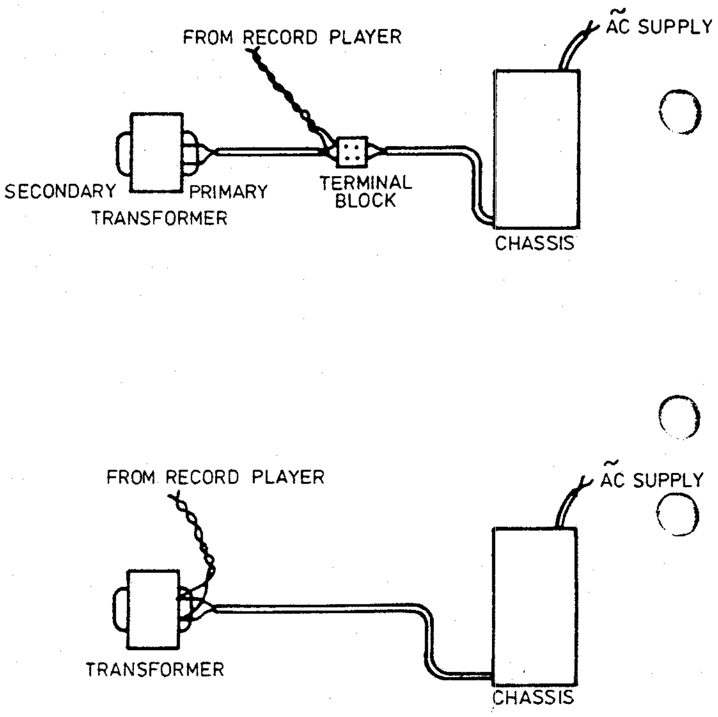


Fig.2

Notes - Service Manual 726 17371

1. **R475 - see revised circuit diagram, Pages 13 and 14**

   R474 was duplicated in the tuner board illustrations on Page 17. R474 adjacent to R405 is a 2K2R 0.33W **code 110 63116**, as listed on Page 18. This resistor is now shown as R475 in the revised circuit diagram.

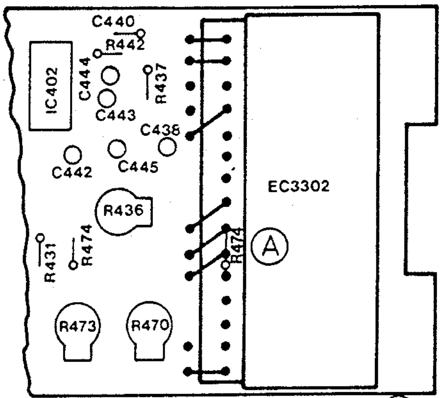
   The correct value of R474 (adjacent to R431 and in alternative position A) is 470R 0.33W, **code 110 63098**.

2. **Addendum to Page 17**

   Tuner Board: R455, adjacent to R458 should read C455 on the component side view (shown correctly on track side view).

3. **Addendum to Page 21**

   I.C.201 on L.H. side of track side view should read I.C.231.

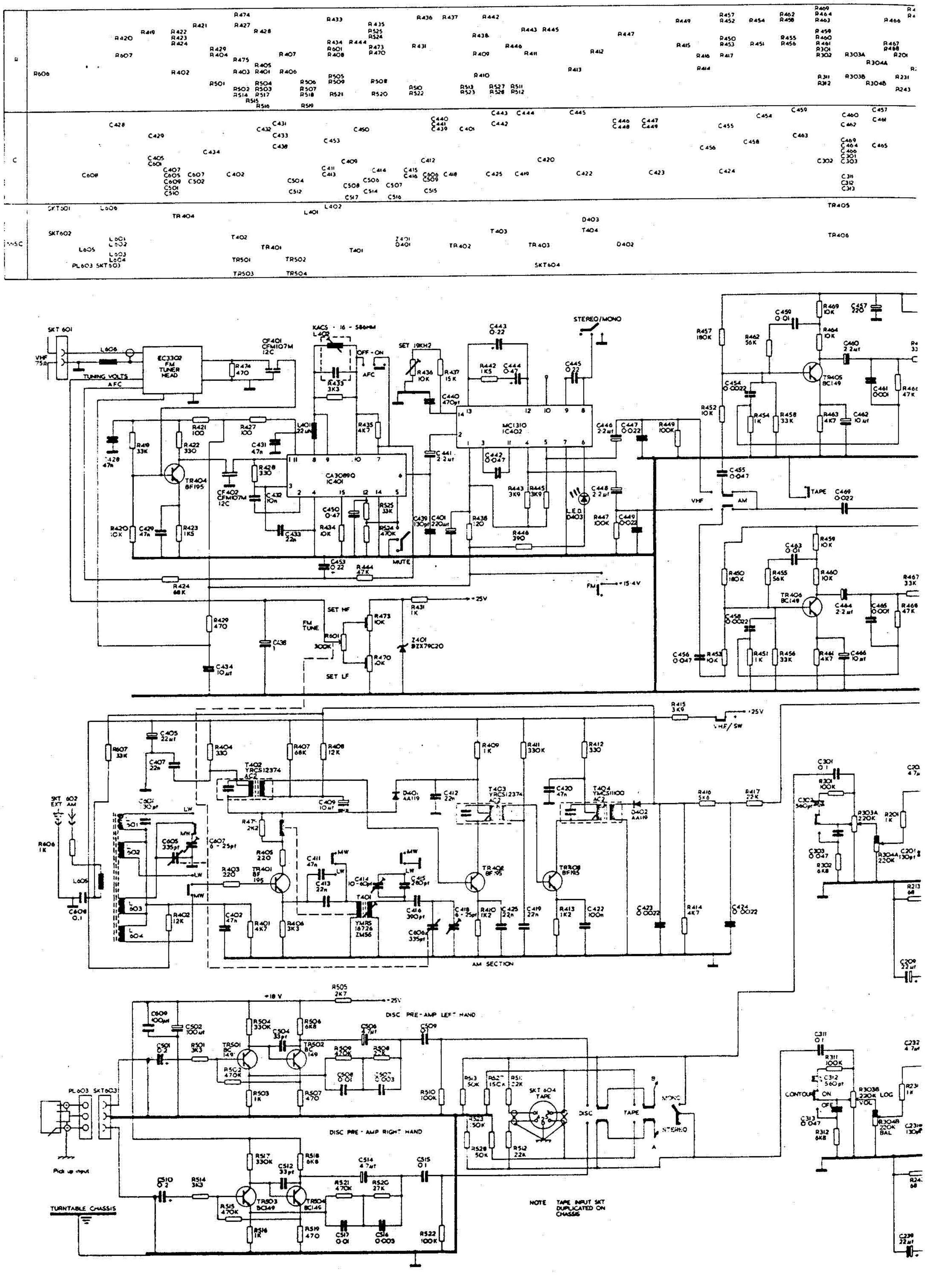


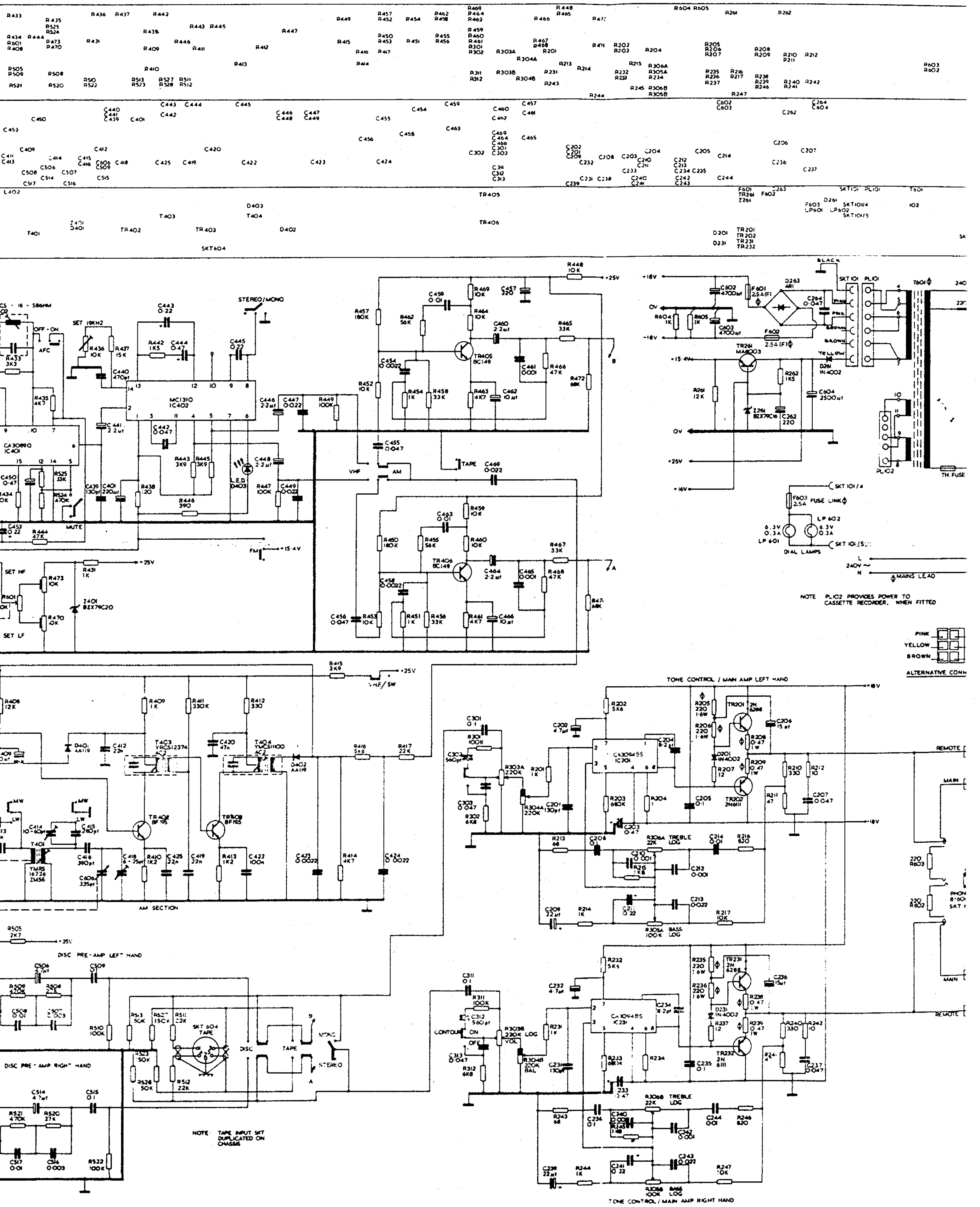
NOTE R474 FITTED AT POSITION (A) ON EARLY MODELS

TUNER MODULE LINK WIRE POSITIONS

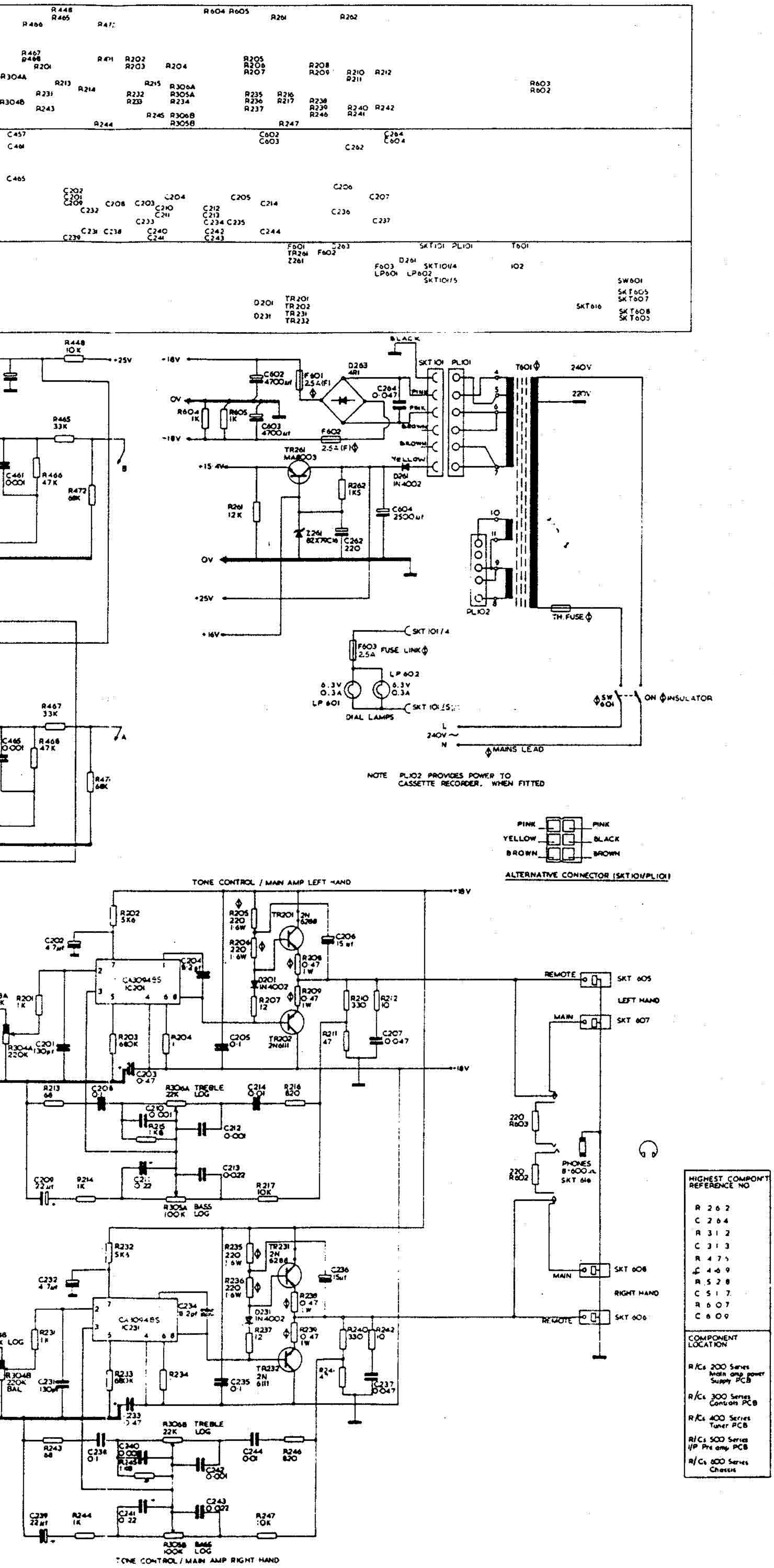
Fig.3

Circuit Diagram


R
C
MISC
SKT 601
VHF 75Ω
L606
EC3302 FM TUNER HEAD
TUNING VOLTS
AFC
CF401 CFM107M 12C
R474 470
KACS - 16 - 586HM
L402
OFF - ON
AFC
R435 3K3
SET 19KH2
R436 10K
R437 15K
C440 470pf
C443 0·22
R442 1K5
C444 0·47
STEREO/MONO
C445 0·22
MC1310 IC402
CA3089Q IC401
TR404 BF195
R421 100
R427 100
R422 330
R419 33K
C428 47n
R428 330
C431 47n
CF402 CFM107M 12C
C432 10n
R420 10K
C429 47n
R423 1K5
C433 22n
C450 0·47
R434 10K
R525 33K
R524 470K
MUTE
C453 0·22
R444 47K
C439 130pf
C401 220uf
R438 120
R443 3K9
R445 3K9
L.E.D. D403
R446 390
C446 2·2uf
C447 0·022
R449 100K
C448 2·2uf
R447 100K
C449 0·022
R424 68K
FM
+15·4V
+25V
R431 1K
SET HF
R473 10K
FM TUNE
R601 300K
R470 10K
SET LF
Z401 BZX79C20
R429 470
C436 1
C434 10uf
R457 180K
R462 56K
C459 0·01
R469 10K
C457 220
R464 10K
C460 2·2uf
TR405 BC149
C454 0·0022
R454 1K
R458 33K
R463 4K7
C462 10uf
C461 0·001
R452 10K
C455 0·047
VHF
AM
TAPE
C469 0·022
R459 10K
C463 0·01
R450 180K
R455 56K
R460 10K
TR406 BC149
C464 2·2uf
C465 0·001
R467 33K
C458 0·0022
C456 0·047
R453 10K
R451 1K
R456 33K
R461 4K7
C466 10uf
R415 3K9
+25V
VHF/SW
C405 22uf
R607 33K
C407 22n
R404 330
T402 YRCS12374 AC2
R407 68K
R408 12K
D401 AA119
C412 22n
R409 1K
R411 330K
T403 YRCS12374 AC2
R412 330
C420 47n
T404 YMCS11100 AC2
D402 AA119
R416 5K6
R417 22K
C409 10uf
SKT 602 EXT AM
R606 1K
C601 30pf
LW
MW
C605 335pf
C607 6 - 25pf
R475 2K2
R405 220
R403 220
TR401 BF195
C411 47n
C413 22n
C414 10 - 60pf
C415 280pf
T401 YMRS 16726 ZM56
C416 390pf
C606 335pf
C418 6 - 25pf
TR402 BF195
TR403 BF195
L605
C608 0.1
L 601
L 602
L 603
L 604
R402 12K
C402 47n
R401 4K7
R406 3K3
R410 1K2
C425 22n
C419 22n
R413 1K2
C422 100n
C423 0·0022
R414 4K7
C424 0·0022
AM SECTION
C301 0·1
R301 100K
C302 560pf
R303A 220K
R201 1K
C303 0·047
R302 6K8
R304A 220K
C201 130pf
R213 68
C209 22uf
R505 2K7
+18V
+25V
DISC PRE-AMP LEFT HAND
C609 100pf
C502 100uf
R504 330K
R506 6K8
C504 33pf
C506 4·7uf
C509 0·1
C501 0·2
R501 3K3
TR501 BC149
TR502 BC149
R509 470K
R508 27K
R502 470K
C508 0·01
C507 0·003
R503 1K
R507 470
R510 100K
R513 50K
R527 15CA
R511 22K
SKT 604 TAPE
DISC
TAPE
MONO
STEREO
B
A
R523 50K
R528 50K
R512 22K
PL603 SKT603
Pick up input
DISC PRE - AMP RIGHT HAND
R517 330K
R518 6K8
C512 33pf
C514 4·7uf
C515 0·1
C510 0·2
R514 3K3
TR503 BC149
TR504 BC149
R521 470K
R526 27K
R515 470K
C517 0·01
C516 0·003
R516 1K
R519 470
R522 100K
TURNTABLE CHASSIS
NOTE TAPE INPUT SKT DUPLICATED ON CHASSIS
C311 0·1
R311 100K
C312 560pf
CONTOUR ON OFF
R303B 220K LOG VOL
R304B 220K BAL
C313 0·047
R312 6K8
C232 4·7uf
C231 130pf
C239 22uf
TR405
TR406
TR404
TR401
TR402
TR403
TR501
TR502
TR503
TR504
D403
D402
D401
Z401
T401
T402
T403
T404
L401
L402
SKT501
SKT602
SKT604
PL603 SKT503



TONE CONTROL / MAIN AMP LEFT HAND
TONE CONTROL / MAIN AMP RIGHT HAND
DISC PRE-AMP LEFT HAND
DISC PRE-AMP RIGHT HAND
AM SECTION
NOTE: TAPE INPUT SKT DUPLICATED ON CHASSIS
NOTE PL102 PROVIDES POWER TO CASSETTE RECORDER, WHEN FITTED
ALTERNATIVE CONN
MAINS LEAD
DIAL LAMPS
FUSE LINK
STEREO/MONO
SET 19KHZ
AFC
OFF - ON
MUTE
SET HF
SET LF
MC1310 IC402
CA3089Q IC401
CA1094SS IC201
CA1094SS IC231
TR405 BC149
TR406 BC149
TR402 BF195
TR408 BF195
TR261 MA8003
TR201 2N 6288
TR202 2N6111
TR231 2N 6288
TR232 2N 6111
T403 YRCS12374 AC2
T404 YUCS11100 AC2
T401 YMRS 16726 ZM56
SKT 604 TAPE
DISC
TAPE
MONO
STEREO
VHF
AM
FM
VHF / SW
CONTOUR
ON
OFF
VOL
BAL
TREBLE LOG
BASS LOG
REMOTE
MAIN
PHONE
PINK
YELLOW
BROWN
BLACK
SKT 101
PL101
PL102
T601
TH. FUSE
+25V
+18V
-18V
+15.4V
+16V
0V
240V ~
L
N


NOTE PL102 PROVIDES POWER TO CASSETTE RECORDER, WHEN FITTED
ALTERNATIVE CONNECTOR (SKT101/PL101)
PINK
YELLOW
BROWN
PINK
BLACK
BROWN
DIAL LAMPS
MAINS LEAD
ON INSULATOR
TH. FUSE
FUSE LINK
240V
220V
T601
SKT 101
PL101
PL102
F601 2.5A (F)
F602 2.5A (F)
F603 2.5A
C602 4700µf
C603 4700µf
C604 2500µf
D263 4R1
D261 IN4002
TR261 MA8003
Z261 BZX79C16
R261 12K
R262 1K5
R604 1K
R605 1K
LP 601 6.3V 0.3A
LP 602 6.3V 0.3A
SW 601
+18V
0V
-18V
+15.4V
+25V
+16V
TONE CONTROL / MAIN AMP LEFT HAND
TONE CONTROL / MAIN AMP RIGHT HAND
CA3094S IC201
CA3094S IC231
TR201 2N 6288
TR202 2N6111
TR231 2N 6288
TR232 2N 6111
D201 IN4002
D231 IN4002
R306A TREBLE 22K LOG
R305A BASS 100K LOG
R306B TREBLE 22K LOG
R305B BASS 100K LOG
R304B 220K BAL
REMOTE
MAIN
SKT 605
LEFT HAND
SKT 607
SKT 608
RIGHT HAND
SKT 606
PHONES 8-600Ω SKT 616
R603 220
R602 220
HIGHEST COMPON'T REFERENCE NO
R 262
C 264
R 312
C 313
R 475
C 469
R 528
C 517
R 607
C 609
COMPONENT LOCATION
R/Cs 200 Series Main amp power Supply PCB
R/Cs 300 Series Controls PCB
R/Cs 400 Series Tuner PCB
R/Cs 500 Series I/P Pre amp PCB
R/Cs 600 Series Chassis

Notes

Safety Components

This equipment contains certain components which have been specially chosen to ensure safety under both normal and fault conditions. These components are identified by the safety symbol in the circuit diagram and are listed below. Should a safety component need to be replaced, it is essential to use a component of identical type, mounted in exactly the same manner.

Notes - Safety Components, SRX20 Chassis

Mains Transformer

Two code numbers are given for the mains transformer in the service manual. The correct code for all models is 146 27027. **The replaceable thermal fuse must not be repaired using ordinary solder - see page 8 of the Service Manual.**

Fuses F601, 602

F601 and F602 were changed in production from 1.6A to 2.5A type (F). The latter value should be fitted in all replacements and, where the original fuses are 1.6A, both should be replaced by 2.5A types to ensure equal protection of the positive and negative supply rails.

Fuse F603

The tag strip and 5-amp fuse wire have been deleted in production and replaced by a 2.5A cartridge fuse and holder. See "Production Changes", Page 12.

Ceramic Bead Spacers

To prevent localised heating of the Main Amp/Power Supply board, these spacers have been introduced in production on each leg of R205, 206, 235, 236 (220R) and R208, 209, 238, 239 (0.47R).

Spacers should be fitted when any of the above components are replaced and/or when localised heating of the board is evident during servicing.

Ref.	Description	Code No.
T601	Mains Transformer, C/W thermal fuse	146 27027 ◈
For Txfmr	Thermal Fuse	252 20007 ◈
SW601	Mains Switch Insulator, mains switch Clamp, mains lead Mains Lead, 2-core assy.	276 17034 ◈ 466 97243 ◈ 290 47213 ◈ 321 17029 ◈
R205-6 R235-6	Resistor, 220R 16W 5%	116 57296 ◈
R208-9 R238-9	Resistor, 0.47R 1W	113 67018 ◈
For above Res.	Spacer, Ceramic Bead	532 57218 ◈
F601, 602, 603	Fuse, 2.5A (F)	253 20024 ◈

Pick-up Styli - Guarantee Procedures

Styli found to be faulty or damaged when the unit is unpacked are covered by the Dynatron "28 days following date of unpacking" guarantee and should be reported to Dynatron head office within the 28-day period.
Outside the 28-day guarantee period, pick-up styli are guaranteed not by Dynatron Radio Limited, but by the styli manufacturers and should be returned to them for examination and replacement at their discretion.

Vernitron V100 styli should be returned to:

Vernitron Limited
Thorn Hill
Southampton
SO9 5QF
Tel. (0703) 444811

Philips Styli should be returned to:

Philips Industries
City Hse, 420-430 London Rd,
Croydon, Surrey.
Tel. 01-689-2166
Marked for the attn of Mr L. Freeman,
Customer Liaison Mngr, Audio Division.

Accessories

RSU13

Qty	Ref.	Description	Code No.
		Cabinet Mahogany	448 17007
2		Handle	498 67021
2		Magnetic Catch	417 47004
2		Hinge Leaf LH	417 17105
2		Hinge Leaf RH	417 17106
2		Rubber Headed Tack	462 77332
		Leather Skiver	460 67003
4		Castor and Socket	528 77059

SU1300CR

Qty	Ref.	Description	Code No.
		Cabinet Rosewood	448 17008
4		Castor and Socket	528 77059
2		Hinge	417 17118
2		Catch	417 47005
2		Plate	466 87065

SU1400CT

Qty	Ref.	Description	Code No.
2		Magnetic Catch	417 47005
4		Castor and Socket	528 77059
2		Hinge	417 17118
2		Striker Plate	466 87065

SU1500PK

Qty	Ref.	Description	Code No.
2	LH	Hinge	417 17105
2	RH	Hinge	417 17106
2		Magnetic Catch	498 67027
2	Striker	Plate	466 87065
2		Handle	498 67043
2		Rubber Headed Tack	462 77332
4		Castor and Socket	528 77059

SU1600PW

Qty	Ref.	Description	Code No.
		Cabinet Walnut	448 17006
2		Handle	498 67019
2		Magnetic Catch	417 47004
2		Hinge LH	417 17105
2		Hinge RH	417 17106
		Leather Skiver	460 67002
2		Rubber Headed Tack	462 77332
4		Castor and Socket	528 77059

ST1200CT

Qty	Ref.	Description	Code No.
4		Leg	462 17239
4		Leg Plate	401 17238
8	For Leg Plate	Screw M8 × ½" Rd Pozi	502 47049
10	For Plinth	Screw M8 × 2" Csk. Pozi.	502 47067
4	For Leg	Glide	462 57004

ST1000CR

Qty	Ref.	Description	Code No.
4		Leg	462 17233
4		Leg Plate	401 17238
8	For Leg Plate	Screw M8 × ½" Rd Pozi	502 47049
10	For Plinth	Screw M8 × 2" Csk. Pozi	502 47067
4	For Leg	Glide	462 57004

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DYNATRON 'SRX 20' Chassis, Models CD780, GC1010, GC1110 GC1210, MC1010, MC1610 RG1010, RG1110, RG1210

General Description: The SRX20 series chassis is a compact, high fidelity instrument of advanced design comprising four printed circuit boards as follows: A.M./F.M. Tuner; Input Selector; Tone Control Panel; Main Amplifiers/Power Supply.

The main amplifier/power supply board is mounted on a heat sink to form a sub-assembly which, in turn, is attached to the main chassis and hinges out for access.

The mains transformer is remotely located in the cabinet and connects to the main chassis by a multi-way connector and terminal block.

The models are all fitted with a removeable base for ease of access to the chassis and ancilliary equipment.

Ancilliary Equipment fitted to Models using SRX20 Series Chassis: Models RG1010PW, RG1110PM and RG1210PK are fitted with a Garrard SP25 Mk. IV Record playing unit and Vernitron V 100 magnetic cartridge.

Models MC1010CR, MC1610CT, GC1010PW, GC1110PM and GC1210PK are fitted with a Garrard 35SB Record playing unit, Vernitron V 100 cartridge and a Dynatron CD780 Dolby System Stereo Cassette Tape Deck.

Mains Supply: 240V, 59Hz.

Output Power: 10W per channel (RMS).

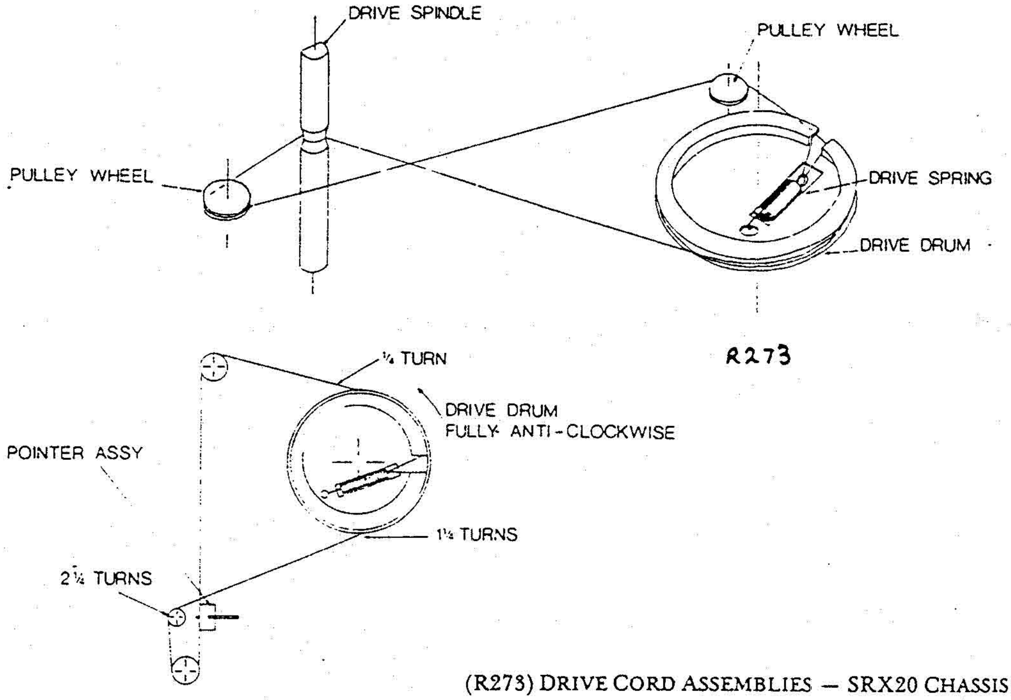
Loudspeakers: 8Ω impedance.

Dismantling

When removing and installing the chassis, always carefully note the positioning of the inter-connecting cables and the points at which they are cleated. Interaction may occur if cables are not correctly placed.

The thermal fuse fitted to the mains transformer is replaceable by withdrawing the active element from its housing. The element of the thermal fuse is bridged by a special low melting-point metal and **must not be repaired using ordinary solder.** Always fit a replacement element.

Chassis Removal and Installation: 1. Secure the pickup-arm to its rest and tighten the record playing unit transit screws so that the unit is in the fully clamped position.



(R273) DRIVE CORD ASSEMBLIES — SRX20 CHASSIS

2. Disconnect internal loudspeaker and aerial plugs from rear sockets panel.

3. Close the lid and invert the unit, placing it on a soft surface (i.e. felt covering).

4. Locate and remove the base fixing screws and remove the base. Note that it is not necessary to remove internal loudspeaker housing base panels unless access to the loudspeakers is required.

5. Release the mains lead to the mains transformer from the terminal block and release the plug and socket inter-connecting the mains transformer secondary with the chassis.

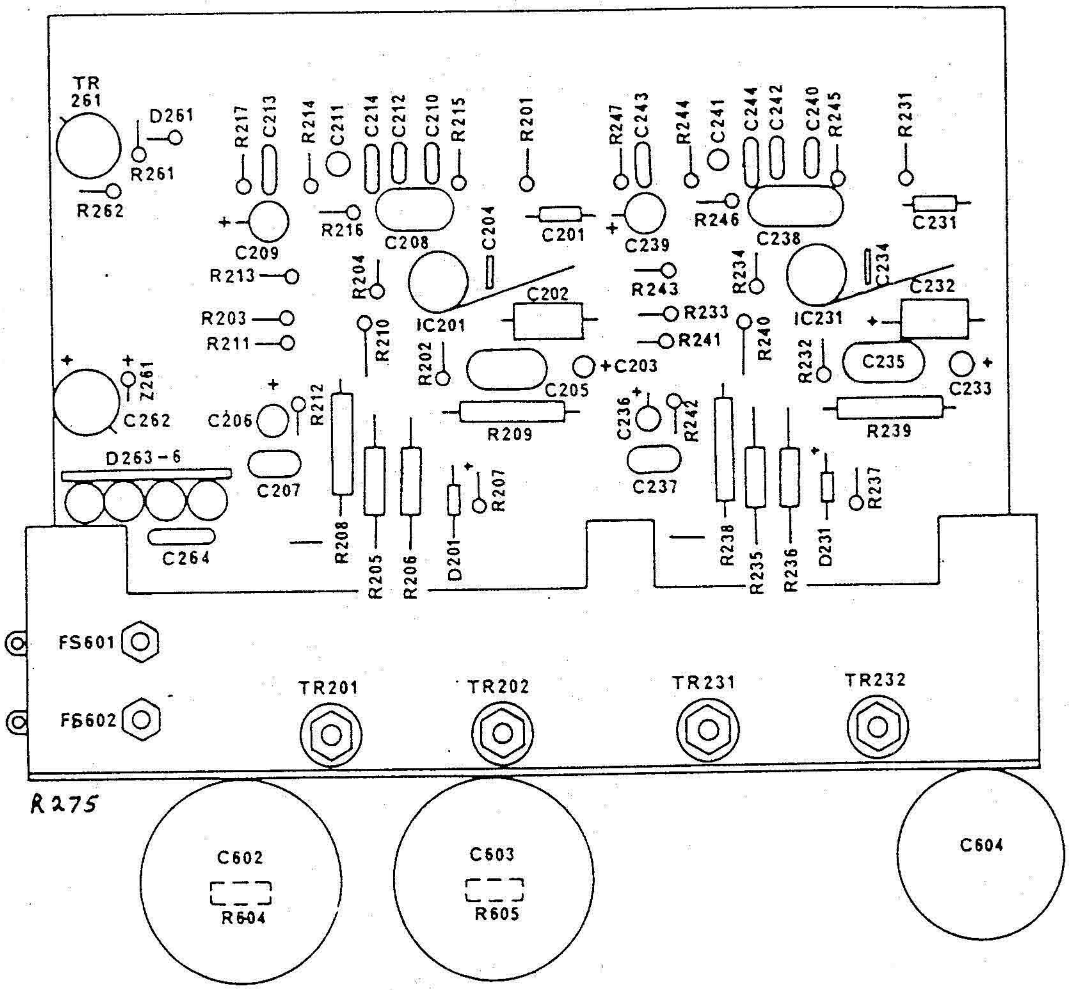
6. Disconnect the signal leads to the record player from the chassis (SKT 603).

7. Locate 2 × M4 nuts securing chassis over studs. Remove these nuts and associated washers and carefully lift chassis clear of cabinet.

Install the chassis in reverse order, taking care that the mains lead is not trapped by the chassis at the rear sockets panel aperture in the cabinet. When reconnecting internal loudspeakers, ensure that they are connected into the loudspeaker sockets marked 'MAIN' and that the left-hand loudspeaker is connected to the L.H. socket and vice-versa.

Ancilliary Equipment Removal and Installation: Follow steps 1,3 and 4 under Chassis Removal and Installation.

Record Player Removal: Disconnect the signal lead to the record player from the chassis, as for chassis removal (item 6).


TR 261
D261
R261
R262
R217
C213
R214
C211
C214
C212
C210
R215
R201
R247
C243
R244
C241
C244
C242
C240
R245
R231
C209
R216
C208
C204
C201
C239
R246
C238
C231
R213
R204
C202
R243
R234
C234
C232
R203
R211
R210
IC201
R233
R241
R240
IC231
R202
C203
R232
C235
C233
Z261
C262
C206
R212
C205
C236
R242
R209
R239
D263-6
C207
R207
C237
R237
C264
R208
R205
R206
D201
R238
R235
R236
D231
FS601
FS602
TR201
TR202
TR231
TR232
R275
C602
R604
C603
R605
C604

(R275) COMPONENT LAYOUT (MAIN AMPLIFIER AND POWER SUPPLY BOARD)
SRX20 CHASSIS

Disconnect the mains lead wires from the terminal block.

Place the unit on one side, so that both sides of the record player are accessible.

Locate the two record player transit screws on the top side of the player and, whilst steadying the player, turn the transit screws until the become flush with the deck plate.

Locate the two spring-steel transit screw clips on the underside of the player and move them into their vertical position so that they will clear the transit screws holes.

Carefully remove the record player from the top of the cabinet.

Install in reverse order, passing the mains and signal leads through the cutout in the motor board. Ensure that the record player suspension springs are seated in their corresponding sockets in the motor board, and that the transit screw clips are set to their horizontal position after installation. Tighten the transit screws so that the player is clamped to the motor board before inverting or transporting the unit.

Cassette Tape Deck: (not models RG1010PW, RG1110PM and RG1210PK). *Removal:* Unplug the tape deck signal lead from 5-pin DIN socket SKT604A on the chassis.

Disconnect the 5-way power supply connector located on the tape deck.

Place the unit on one side so that both sides of the cassette tape deck are accessible and release all cleats holding the connecting leads — make a note of the position of the leads for future reference.

Locate and release the M4 nut securing the front support bracket and remove the nut, washer and bracket.

Whilst steadying the tape deck from its top side, locate and remove the 4-off M4 nuts and washers securing the deck to the motor board.

Carefully remove the tape deck from the top of the cabinet.

Install in the reverse order, passing the mains and signal leads through the cutout in the motor board. Ensure that the tape deck is located squarely in the motor board before fully tightening the securing nuts. Take care to route connecting leads correctly, as noted whilst removing the deck, to avoid interaction.

Alignment

F.M. I.F.: As the I.F. bandpass characteristic is tightly controlled by ceramic filters, no I.F. alignment is possible; it is necessary, however, to align the tuner module I.F. output coil resonance to match the I.F. amplifier frequency, as follows:

Tune the receiver to an F.M. signal generator, the output of which is set to any clear part of the frequency band (87·5—104MHz) and modulated to at least 70kHz deviation. With an oscilloscope connected to C446 (L.H. channel) or C448 (R.H. channel), observe the audio output. Adjust the F.M. tuner module I.F. output coil (mauve) for maximum output and minimum distortion, using the lowest R.F. output level from the generator that provides a satisfactory display.

Readjust the signal generator output level to 200μV and adjust the quadrature detector coil (L402) for maximum audio output. This adjustment, when accurately set, automatically assures maximum A.M. rejection.

F.M. R.F.: As the F.M. tuner is a factory prealigned unit, no R.F. alignment should be attempted. However, the frequency coverage is adjustable. Two pre-set potentiometers are provided. With the tuning cursor set to L.F. end of the scale, adjust R470 to receive 87·5MHz; with the tuning cursor set to the H.F. end of the scale, adjust R473 to receive 104MHz.

Note: There is interaction between these controls, therefore this adjustment procedure should be repeated until correct alignment is obtained.

MPX Stereo Decoder Adjustment: Only one adjustment is required on this decoder, which is to set the oscillator to the correct tuning frequency. Proceed as follows:

Whilst receiving a stereo encoded signal from either a transmission or a signal generator, adjust R436 until the stereo beacon L.E.D. just lights. Note position of R436. Continue to rotate R436 , in the same direction, until the L.E.D. (D403) is just extinguished. Note this new position of R436. Return the adjustment to a point midway between the two previously noted positions.

A.M. I.F.: With the receiver set for Long Wave reception, proceed as follows:

1. Set an A.M. signal generator to 470kHz output and connect it to the EXTERNAL A.M. Aerial Socket.
2. Connect a valve voltmeter to A.M. receiver detector load R416.
3. Advance the signal generator output until a negative reading of approximately 0·5V is observed on the meter.

Note: It may be necessary to adjust the receiver tuning so that it is clear of heterodyne whistles from other incoming transmissions.)

4. Whilst adjusting the signal generator output so that it does not exceed 0·5V D.C. from the detector adjust, in turn, the I.F. output transformer T404 core and I.F. amplifier transformer cores (T402 and T403) for maximum negative output voltage.

This completes the alignment of the I.F. amplifier to 470kHz for maximum sensitivity.

A.M. R.F.:

1. Set the receiver to Medium Wave operation and tune to the L.F. end of the scale.
2. Set an A.M. signal generator to 525kHz, 30 per cent modulation and apply this signal to the EXTERNAL A.M. aerial socket (output level approximately 200μV).
3. Adjust oscillator coil T401 core to receive the above signal.
4. Retune the receiver to the H.F. end of the scale.
5. Adjust the signal generator to 1,630KHz, 30 per cent modulation.
6. Adjust M.W. oscillator trimmer C418 to receive the above signal.
7. Repeat steps 2, 3, 4, 5 and 6 above until end-stops are correctly set.
8. Readjust the signal generator to 600kHz with reduced output and tune the receiver to this signal. Check the calibration on the tuning scale.
9. Adjust the position of the M.W. aerial coil on the ferrite rod for maximum output.
10. Reset the signal generator to 1,400 kHz and tune the receiver to this signal.
11. Adjust M.W. trimmer C606 (mounted on chassis) for maximum output.
12. Repeat steps 8, 9, 10 and 11 above until no further improvement can be made.

13. Set the receiver to Long Wave operation, tune scale cursor to coincide with the 1,500 metre calibration point on the scale.

14. Either: Using a signal generator set to 200kHz or: Using a B.B.C. 1,500 transmission. Adjust L.W. oscillator trimmer C414 to receive the above signal.

15. Adjust position of the L.W. aerial coil on the ferrite rod for maximum output.

Amplifer Checks: There are no adjustments required in the audio circuits. Should a fault condition exist, the following checks should be carried out and investigated:

1. Disconnect all loudspeaker loads.
2. Set volume control to minimum.
3. Connect two ammeters, set to read 1A, D.C., in place of 2·5A H.T. fuses (F601, F602) mounted on the main amp/power supply P.C.B. heatsink.
4. Switch on mains supply — each ammeter should read not more than 170mA.

Important Note: The SRX 20 amplifier power supply consists of both a positive and a negative supply relative to earth. It is important, therefore, that during the above checks, both circuits are operating.

Do not check current consumption across one fuse whilst the other is open circuit. If only one ammeter is available, use a fuse link to complete the other circuit.

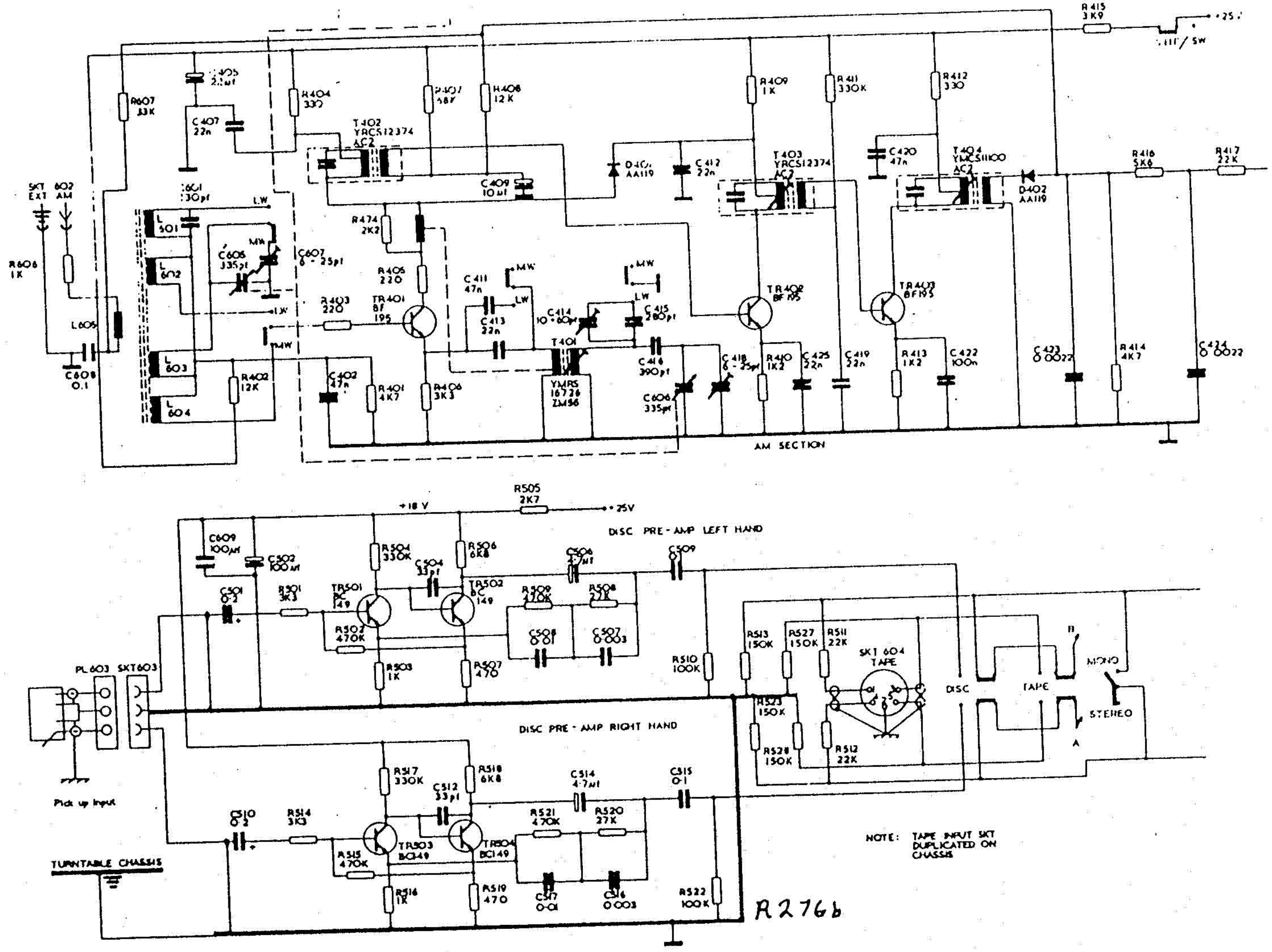
5. Disconnect the meters and insert a 2·5A type F fuse to BEAB approved specification into each fuse holder.
6. With volume control set to minimum, connect a valve voltmeter, set to its lowest D.C. voltage range, across one L.H. loudspeaker output socket. Check that not more than 0·1V, positive or negative, is present at the output.

Repeat for R.H. channel.

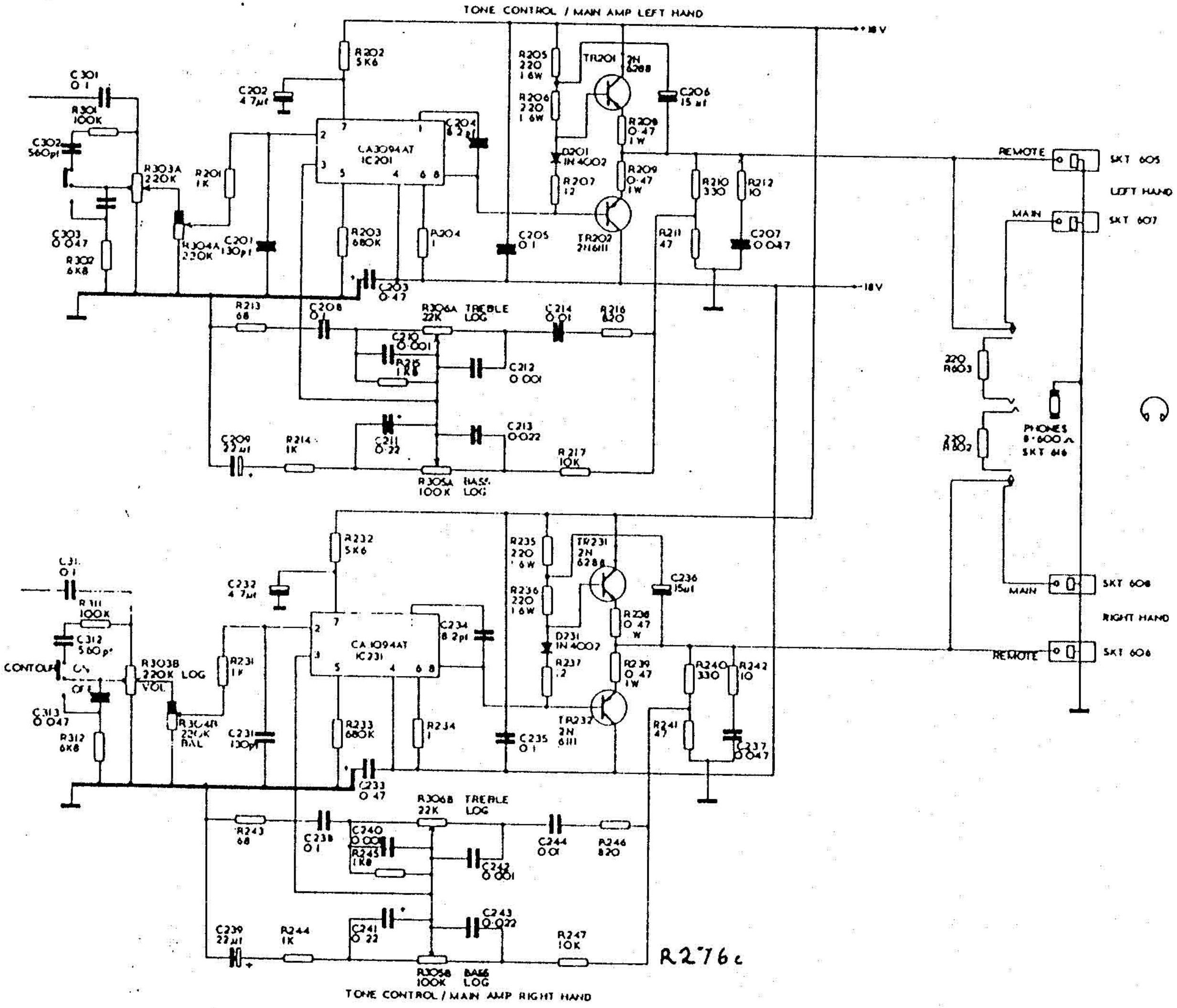
General Note—Amplifier: If any frequency response/power output measurements are to be made, these should only be undertaken using a loudspeaker load impedance of 8Ω. Under normal operating conditions, however, the amplifier design is such that a 4Ω loudspeaker load (i.e. 2 pairs of 8Ω enclosures) may safely be used.

Tape Deck Adjustment: The following information supercedes that given in Dynatron Service Data Sheet Code No. 725 17516 and applies to all production models.

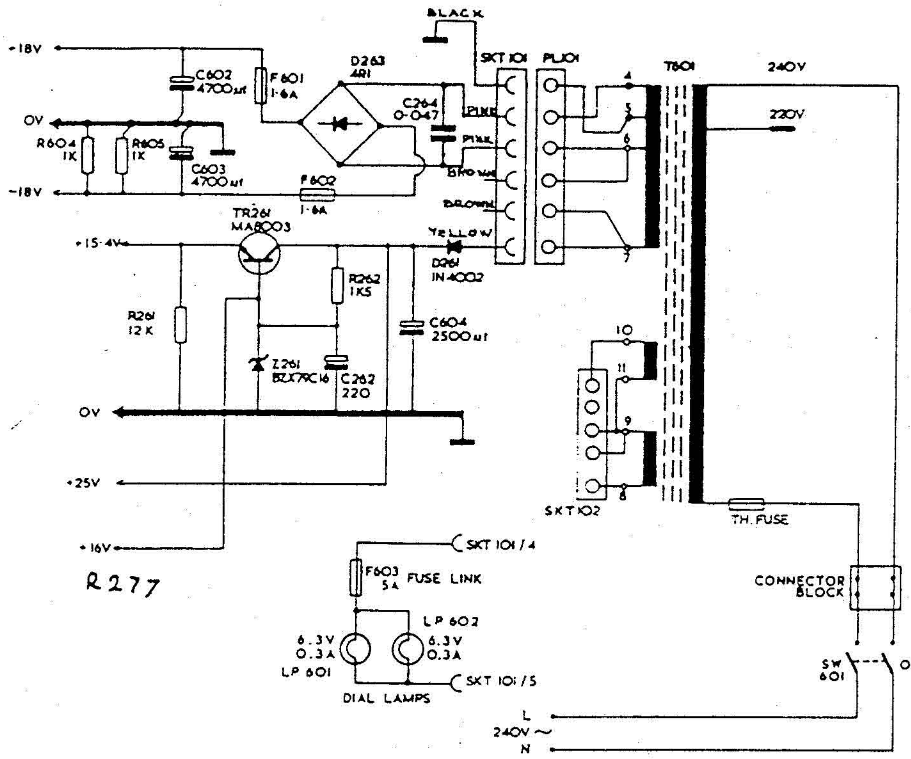
1. Tape Speed: Connect a frequency counter to one channel either L.H. channel, blue and black leads and earth, or R.H. channel, white and green leads and earth, on tag strip 1L5P. Insert Philips Test Cassette Tape TC — FL315<3·15kHz> and adjust Motor Speed Adjustment Screw, accessible through hole in top cover of motor, to this frequency.


R415 3K9
+25V
MW / SW
C405 2.2µf
R607 33K
C407 22n
R404 330
R407 68K
R408 12K
T402 YRCS12374 AC2
C409 10µf
D401 AA119
C412 22n
R409 1K
R411 330K
T403 YRCS12374 AC2
R412 330
C420 47n
T404 YMCS11100 AC2
D402 AA119
R416 5K6
R417 22K
SKT EXT
602 AM
C601 30pf
LW
L501
L602
C608 335pf
MW
C607 6 - 25pf
R606 1K
L605
R474 2K2
R405 220
TR401 BF195
R403 220
C411 47n
C413 22n
C414 10 - 60pf
C415 280pf
T401 YMRS 16726 ZM56
C416 390pf
C418 6 - 25pf
C606 335pf
TR402 BF195
TR403 BF195
R410 1K2
C425 22n
C419 22n
R413 1K2
C422 100n
C423 0.0022
R414 4K7
C424 0.0022
C608 0.1
L603
L604
R402 12K
C402 47n
R401 4K7
R406 3K3
AM SECTION
R505 2K7
+18 V
+25V
DISC PRE-AMP LEFT HAND
C609 100µf
C502 100µf
R504 330K
C504 33pf
R506 6K8
C506 4.7µf
C509
C501 0.2
R501 3K3
TR501 BC149
TR502 BC149
R509 470K
R508 27K
R502 470K
C508 0.01
C507 0.003
R503 1K
R507 470
R510 100K
R513 150K
R527 150K
R511 22K
SKT 604 TAPE
DISC
TAPE
B
MONO
STEREO
A
R523 150K
R528 150K
R512 22K
PL603
SKT603
Pick up input
DISC PRE-AMP RIGHT HAND
R517 330K
C512 33pf
R518 6K8
C514 4.7µf
C515 0.1
C510 0.2
R514 3K3
TR503 BC149
TR504 BC149
R521 470K
R520 27K
R515 470K
R516 1K
R519 470
C517 0.01
C516 0.003
R522 100K
TURNTABLE CHASSIS
NOTE: TAPE INPUT SKT DUPLICATED ON CHASSIS
R276b

(R276b) CIRCUIT DIAGRAM · SRX20 CHASSIS *(Part)*


TONE CONTROL / MAIN AMP LEFT HAND
+18V
-18V
C301 0·1
R301 100K
C302 560pf
R303A 220K
R304A 220K
C303 0·047
R302 6K8
R202 5K6
C202 4·7µf
R201 1K
C201 130pf
CA3094AT IC201
C204 8·2pf
R203 680K
R204 1
C203 0·47
R205 220 1·6W
R206 220 1·6W
TR201 2N 6288
D201 1N4002
R207 12
C205 0·1
TR202 2N6111
C206 15µf
R208 0·47 1W
R209 0·47 1W
R210 330
R212 10
R211 47
C207 0·047
R213 68
C208 0·1
R306A 22K TREBLE LOG
C214 0·01
R216 820
C210 0·001
R215 1K8
C212 0·001
C213 0·022
C209 22µf
R214 1K
C211 0·22
R217 10K
R305A 100K BASS LOG
REMOTE
SKT 605
LEFT HAND
MAIN
SKT 607
220 R603
220 R602
PHONES 8-600Ω SKT 616
SKT 608
RIGHT HAND
SKT 606
C311 0·1
R311 100K
C312 560pf
CONTOUR
ON
OFF
C313 0·047
R312 6K8
R303B 220K LOG VOL
R304B 220K BAL
R232 5K6
C232 4·7µf
R231 1K
C231 130pf
CA3094AT IC231
C234 8·2pf
R233 680K
R234 1
C233 0·47
R235 220 1·6W
R236 220 1·6W
TR231 2N 6288
D231 1N4002
R237 12
C235 0·1
TR232 2N 6111
C236 15µf
R238 0·47 W
R239 0·47 1W
R240 330
R242 10
R241 47
C237 0·047
R243 68
C238 0·1
R306B 22K TREBLE LOG
C244 0·01
R246 820
C240 0·001
R245 1K8
C242 0·001
C243 0·022
C239 22µf
R244 1K
C241 0·22
R247 10K
R305B 100K BASS LOG
TONE CONTROL / MAIN AMP RIGHT HAND
R276c

(R276c) CIRCUIT DIAGRAM · SRX20 CHASSIS *(Continued)*


BLACK
+18V
C602
4700uf
F601
1·6A
D263
4R1
SKT 101
PL101
T601
240V
220V
C264
0·047
PINK
PINK
BROWN
BROWN
YELLOW
0V
R604
1K
R605
1K
C603
4700uf
-18V
F602
1·6A
TR261
MA8003
+15·4V
D261
1N4002
R262
1K5
R261
12 K
C604
2500uf
Z261
BZX79C16
C262
220
0V
4
5
6
7
10
11
9
8
SKT102
+25V
+16V
TH. FUSE
R277
SKT 101/4
F603
5A
FUSE LINK
CONNECTOR BLOCK
LP 602
6.3V
0.3A
6.3V
0.3A
LP 601
SW 601
ON
SKT 101/5
DIAL LAMPS
L
240V ~
N

NOTE PL102 PROVIDES POWER TO CASSETTE RECORDER, WHEN FITTED

(R277) CIRCUIT DIAGRAM (POWER SUPPLY) — SRX20 CHASSIS

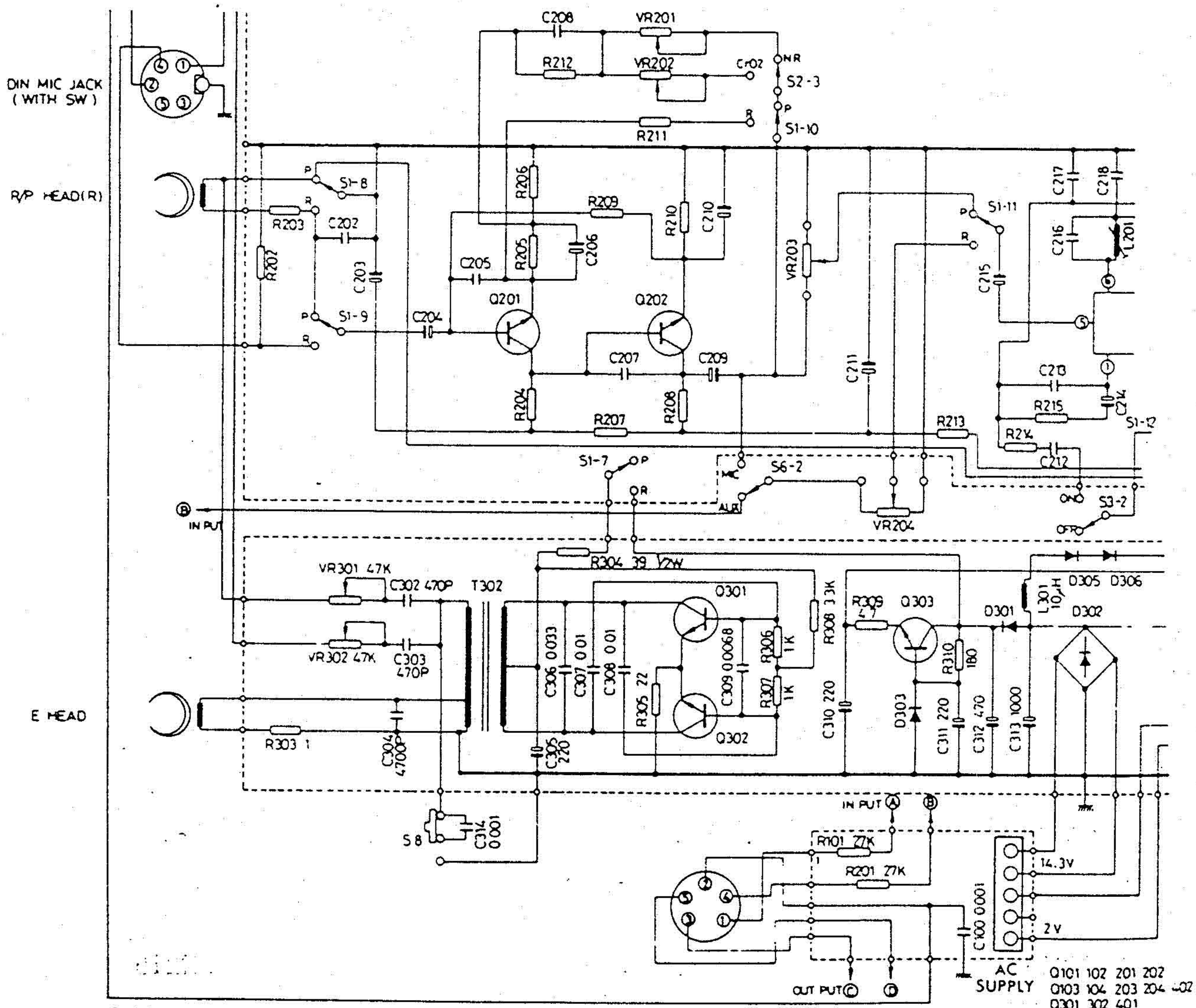
2. *Azimuth:* Connect valve voltmeter, set to A.C. with R.C. load to one channel, as above. Insert Philips Test Cassette Tape TC-A10 (10kHz) and adjust screw L-7 on L.H. side of record/playback head (viewed from front of deck) for maximum output level.

3. *Bias Trap:* Set to Record mode, with no input. Connect valve voltmeter to junction of C135, (C235), R145 (R245) and C115 (C215). Adjust L102 (L202) for minimum reading.

4. *Bias:* Set to Record mode, with no input and with record level controls VR102 and VR202 at zero. Adjust VR106 (VR206) for 6mV (600μA) across R103 (R203).

5. *Record Current:* Remove H.T. Supply to the oscillator by disconnecting the red wire between S1-13 and the junction of R1 and R6. Set to Record mode. Apply 400Hz signal at 0·1mV into pins 1 and 4 of the Microphone socket. Set VR102 and VR202 Record level controls to maximum. Connect valve voltmeter across R103 (R203) and adjust VR103 (VR203) for 1mV reading.

6. *Recording Level Meters:* Perform step 5 and, with 1mV obtained across R103 (R203), adjust VR104 (VR204) to give meter deflections of 100 per cent gap between green and red sectors.


DIN MIC JACK (WITH SW)
R/P HEAD(R)
E HEAD
C208
VR201
R212
VR202
CrO2
NR
S2-3
P
R
S1-10
R211
R206
R209
R210
C210
S1-8
R203
C202
R202
C203
C205
R205
C206
VR203
S1-11
C217
C218
C216
L201
C215
S1-9
C204
Q201
Q202
C207
C209
C211
C213
C214
R215
R204
R207
R208
R213
R214
C212
S1-12
S1-7
S6-2
AUX
VR204
S3-2
ON
OFF
IN PUT
VR301 47K
C302 470P
T302
VR302 47K
C303 470P
R304 39 1/2W
Q301
Q302
Q303
R308 3.3K
R309 4.7
R306 1K
R307 1K
C306 0.033
C307 0.01
C308 0.01
R305 22
C309 0.0068
C305 220
C310 220
R310 180
D303
C311 220
C312 470
C313 1000
D301
D302
D305
D306
L301 10μH
R303 1
C304 4700P
S8
C314 0.001
R101 27K
R201 27K
C400 0.001
14.3V
2V
AC SUPPLY
OUT PUT
Q101 102 201 202
Q103 104 203 204 402
Q301 302 401
Q303
Q403

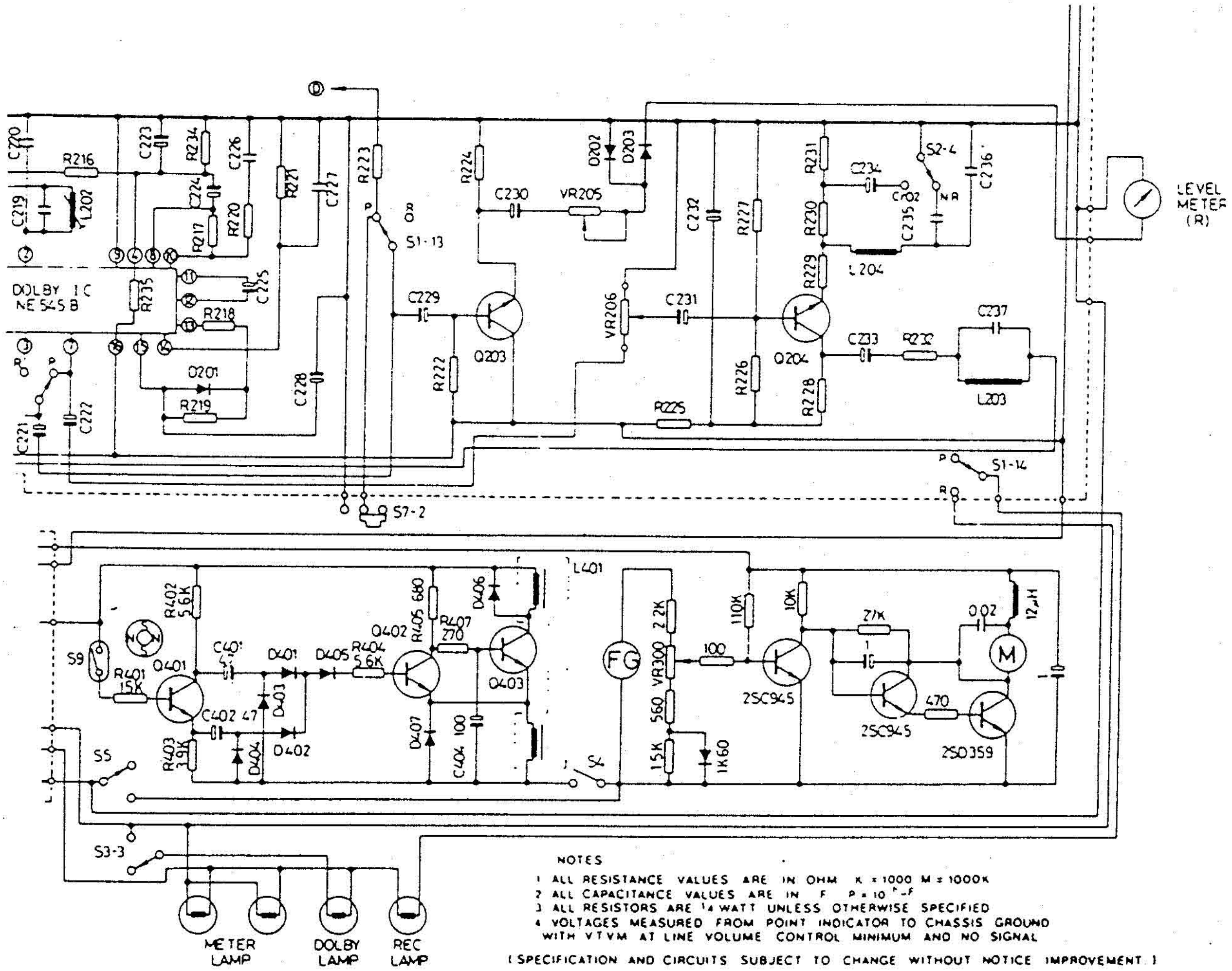
R282a

S1	REC/PLAY SW (PLAY POSITION)	S6	INPUT SELECTOR SW (WITH MIC JACK)(AUX POSITION)
S2	TAPE SELECTOR SW (NR POSITION)	S7	MUTING SW
S3	DOLBY NR SW	S8	BIAS FREQUENCY SHIFT SW
S4	PAUSE SW	S9	AUTO-STOP SW
S5	PLAY SW		

(R282a) CIRCUIT DIAGRAM (CASSETTE UNIT) - MODEL CD789 *(Part)*

7. *Bias Frequency Check:* Connect frequency counter across erase head. Insert blank cassette tape. Set to record. Check bias frequency is 52kHz ± 3kHz.

8. *Playback Level:* Reconnect valve voltmeter, set to A.C. to L.H. channel output. Insert Philips Test Cassette Tape TC-FR (333 Hz Reference Level Section). Set to playback and adjust VR101 for an


LEVEL
METER
(R)
DOLBY IC
NE545B
S1-13
S1-14
S2-4
S7-2
S9
S5
S4
S3-3
Q203
Q204
Q401
Q402
Q403
VR205
VR206
VR300
FG
M
2SC945
2SC945
2SD359
L401
L203
L204
METER
LAMP
DOLBY
LAMP
REC
LAMP

NOTES

1 ALL RESISTANCE VALUES ARE IN OHM K = 1000 M = 1000K
2 ALL CAPACITANCE VALUES ARE IN F P = 10⁻¹²F
3 ALL RESISTORS ARE ¼ WATT UNLESS OTHERWISE SPECIFIED
4 VOLTAGES MEASURED FROM POINT INDICATOR TO CHASSIS GROUND WITH VTVM AT LINE VOLUME CONTROL MINIMUM AND NO SIGNAL

(SPECIFICATION AND CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE IMPROVEMENT)

R282b

2SC1335D
2SC458D
2SC458C
2SC1214B
2SD468C

D101 201	OA90
D102 103 202 203 401 D402 403 404 405	1N60
D301 305 306 406 407	1N4001
D302	W005
D303	RD13E-B

(R282b) CIRCUIT DIAGRAM (CASSETTE UNIT) - MODEL CD789 *(Continued)*

output voltage of 775mV.

9. D.N.L. Circuit.: Insert a blank cassette. Set to playback. With valve voltmeter set to A.C. connect to L.H. output, as above, and adjust VR105 for minimum output.

Reconnect valve voltmeter to R.H. output, as above, and adjust VR205 for minimum output.